MAC CLONES Are They Coming Back? p. 69

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MACWORLD.COM'S TOP 5

The top 5 stories on Macworld.com are:

1 **Review: 20- and 24-Inch Aluminum iMacs (2008 Edition)**
Apple's new crop of iMacs gets a speed bump (macworld.com/3619).

2 **The New Rules for Buying a Mac**
We bust the most common Mac shopping myths (macworld.com/3635).

3 **Opening Up Psystar's Open Computer**
The OS X–capable PC has arrived in our lab; we share our first impressions (macworld.com/3636).

4 **Best of Both Worlds: OS X and Windows**
Rob Griffiths offers advice on how to make two operating systems live in perfect harmony (macworld.com/3637).

5 **Build Your Own iPod Stereo System**
Dan Frakes finds that it just takes smart shopping to assemble a DIY speaker system (macworld.com/3638).

(Ranking valid as of May 27, 2008.)

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FROM THE EDITOR'S DESK By Jason Snell

Back to Basics

Why I like Apple's strategy for the next OS X

At Steve Jobs's keynote for Apple's Worldwide Developers Conference in June, the media focused on the announcement of the new iPhone 3G (see *MacUser*, page 20). But for OS X users there was another huge story that day, one that took up less than a minute of the keynote: the announcement of the next version of OS X, currently known only as Snow Leopard.

Taking Stock

Apple has been working on Mac OS X for more than ten years now. In that time, the successor to the classic Mac OS has evolved from its awkward, half-functional beginnings into a fully functional replacement, with all kinds of whizzy new features such as Spotlight and Time Machine.

At first, each new version of OS X was faster than the one before. But the last two releases (10.4 and 10.5) have been no faster or more stable than their predecessors. (The title of Rick LePage's *Spotlight* column last month, "What I Hate about Leopard," says it all.)

That's why I find it so refreshing that Apple says Snow Leopard won't have hundreds of new features; instead, Apple's programmers will focus on speed and stability.

Faster, Smoother, Smaller

It used to be that computer CPUs got faster every year. But in the past few years, clock speeds have been increasing more slowly. To compensate, chip makers have been adding multiple cores to their processors. A few years ago, only the highest-end Macs had two processor cores; today, every Mac has at least that many.

The problem is, operating systems and programs don't always know how to take advantage of all those cores. In our Speedmark tests (based on 17 Mac tasks using real-world applications), the eight-core 2.8GHz Mac Pro is only twice as fast as the 1.83GHz Mac mini Core 2 Duo; in terms of pure processing power, it should be at least four times as fast. Mac OS X and the programs that run on it aren't taking full advantage of the Mac Pro's superior hardware.

PHOTOGRAPH BY PETER BELANGER

Early in its evolution, OS X sped up with each new version. But the last two releases have been no faster or more stable than their predecessors.

Apple says that Snow Leopard will be optimized for multicore processors. It will also be able to harness the power of your Mac's graphics processor more effectively. The result should be major improvements in speed—not only now, but into the future.

Apple also says that Snow Leopard will be smaller, taking up less space on your Mac's hard drive. I believe the work Apple is doing to make Snow Leopard faster and more stable will benefit all of the hardware devices—iPhones, iPod touches, Apple TVs, and who knows what else in the future—that run OS X, as well as Macs.

Snow Leopard isn't expected to arrive for another year. As always, we'll keep you up-to-date on its development. In the meantime, I give big points to Apple for stepping off the new-feature bandwagon and instead taking the time to make the OS itself run better.

Old Names

In this issue you'll see a name you may recognize from days gone by. We have renamed *Mac Beat*, our front-of-the-magazine section, *MacUser*.

Many of you may remember the old *MacUser* magazine fondly. (I know I do.) What you may not know is that since January 2006 we've been regularly publishing a MacUser blog (macuser.com), where our writers highlight, comment on, and (occasionally) mock the Mac news of the day.

The new *MacUser* section of our magazine will follow that blog's lead. It will still make room for major news stories (such as this month's coverage of WWDC). But it will also acknowledge that in the age of the Internet, a monthly news section doesn't make much sense. Instead, *MacUser* will focus on nuggets of information and opinion, presented in what I think is a fun-to-read, Web-inspired format.

Finally, I want to mention the latest release in our Superguide book series: *Mac Basics*, Leopard Edition (macworld.com/3673). If you're struggling to master the fundamentals of operating a Mac or you're new to Mac OS X, this 88-page guide will get you up to speed quickly. And if you use the link above to place your order, you'll receive a special discount.

What do you want in the next OS X? Let me know what you think in the Macworld Forums (forums.macworld.com) or via e-mail at jason_snell@macworld.com.

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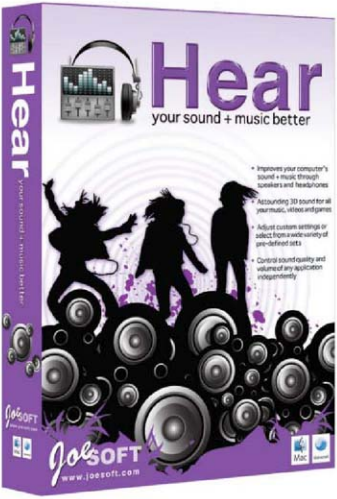
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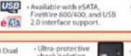

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Last Programs Standing

iWork, Office, browsers, and readers continue to duke it out

Suites and Sour

I was disappointed that "The Office Suite Smackdown" (May 2008) didn't cover PC compatibility. I don't work in isolation, and I don't know droves of other Mac users, so a dedicated switch to iWork without some sharing of output is not realistic. At some point, I will have to share documents with people who use a version of Office. I was looking for a reason to buy iWork, but you didn't give me one. I am going with Office for this version, but I'll check back in a few years.

💬 **Dan Holmes**

When you're done with a file in an iWork program, you just go to File: Export and save the file in the appropriate Office format. This compatibility feature is mentioned in the iWork '08 product reviews we linked to. And Apple has touted this capability on its Web site.—Jonathan Seff

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Corrections

There was an incorrect math formula in May's *Find Files Fast* feature. To find the area of a circle with a diameter of 10 feet, use `pi*pow(10/2, 2)`.

Find Anything with Our Spotlight Tips
Macworld
iWork vs Office
Apple or Microsoft—Which Is Best for You?
iWork '08
Office 2008
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New MacBooks and MacBook Pros

I record my blood sugar levels several times a day to produce a line chart, for my doctor's analysis, of the daily levels during each month. It is impossible to do this in Numbers since you can't specify the coordinates, either x or y, in the detail needed to produce line charts. As the reviewer pointed out, Numbers tries to use decimal values rather than integers for y-axis legends. While AppleWorks may be a bundle of ancient legacy code, and hence not suitable for direct porting, Apple should at least have reproduced these excellent features.

✉ **Don Power**

Why is there no OpenOffice or NeoOffice comparison? These should have been included in any such "smackdown."

💬 **Entplex**

Both OpenOffice and NeoOffice have issues that would make it difficult for the typical Mac user to adapt to the suites. OpenOffice, for instance, doesn't yet have a stable native version. NeoOffice is better, but some things about it don't feel like a Mac-native application, making it more of an adjustment for users. If I were recommending an alternative, it would be NeoOffice, because it's a very good product—but it's just not quite in the same league as the major suites from Apple and Microsoft.—Joe Kissell

I recently purchased iWork '08 and was disappointed. It's unfortunate that since the late 1980s there has not been a better word processing program than WordPerfect on the market. WordPerfect is more than 15 years old yet still has a text-to-speech function, macros, and many more features than any Microsoft or Apple program.

✉ **Raquel Zepeda**

Just Browsing

I am surprised at the rating you gave Safari in your browser roundup (●●●●½; May 2008). In the same issue you state that PayPal does not recommend Safari, since it doesn't offer sufficient security against online fraud ("News in Brief," *Mac Beat*). It seems to me that your rating is too high for a program that lags behind the other big-timers in security features. If Kissell had known of the PayPal criticism, would he still have given Safari the same high rating?

✉ **Greg Anderson**

We included the news item about PayPal's Safari statement because of its inherent interest to our readers. However, we don't share PayPal's opinion that the responsibility for protecting users from phishing scams should fall on the Web browser. We feel that the overall experience of using a browser weighs more heavily than its potential inability to identify fraudulent sites. Thus, in view of Safari's many other

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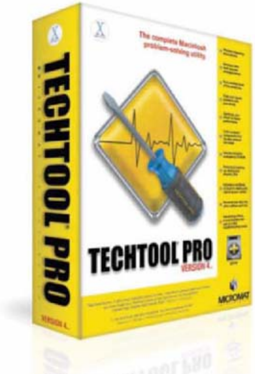
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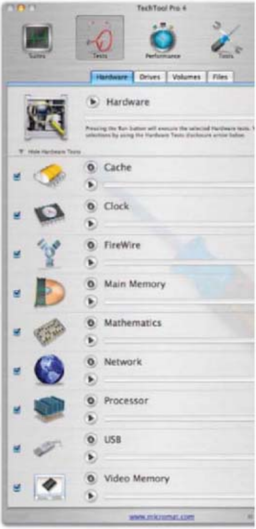
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compelling strengths, we did not reduce its rating.—Joe Kissell

Firefox provides one critical tab-browsing feature that Safari lacks. In Firefox 2.0 and Firefox 3 beta 5, the tabs I keep open for Gmail and for Google Reader will automatically refresh to show the unread count in the tab titles. This allows me to quickly scan the titles for unread messages. In Safari 3.0 and 3.1, this does not work reliably, if at all, forcing me to select the open tabs to see if there are any unread messages.

✉ **Keith Wedinger**

I would like to point out a pretty big misstatement about session management: "Most browsers can also remember open tabs and windows and restore them automatically after you quit and relaunch (or crash). Only Safari and SeaMonkey can't." I use Safari as my main browser, and was completely shocked to see this claim. When Safari does crash, which is way less frequently than Firefox does on my MacBook, I am able to restore all of the tabs from the previous session by going to Reopen All Windows From Last Session under History. Reopen Last Closed Window is another useful feature that Safari has and that others do not.

💬 **Liam Carter-Condon**

It's no misstatement—the operative word is *automatically*. Safari lets you manually restore windows and tabs, but most other browsers let you immediately return to whatever you were looking at before quitting or crashing without an additional step.—Joe Kissell

One of the features I really like about Firefox and Camino that I never see mentioned is the user-defined shortcuts for opening bookmarks. To go to my credit union's site, for instance, I press ⌘-L, type `cu`, and press return. It's very quick and convenient.

💬 **dtarr**

Spotlight Helpers

"Find Files Fast" (May 2008) was valuable, but omitted mention of a common convention that has developed among a number of third-party file-tagging apps, including TagBot, FileSpot, and Leap. These programs precede keywords stored in Spotlight comments with an ampersand (or sometimes an asterisk) to identify them as keywords. For compatibility, users can do the same by entering comment-field tags like `&amp;Q4_presentation`. Including the ampersand in Spotlight's search string will ensure that it finds only keywords and not general comments.

✉ **Rob Lewis**

Take Three?

Christopher Breen compares the Apple TV's main menu interface favorably to its predecessor's ("Apple TV, Take Two," May 2008). However, I find the new interface to be a step backward, as the previous iPod-style menu was more attractive and more intuitive to navigate. In the split-pane version in "take two," the user must press the left and right remote buttons to navigate the top two levels, which is completely inconsistent with how the rest of the interface works. Visually, the new main menu is less interesting, and graphically it's not clear enough which of the two panes you have selected.

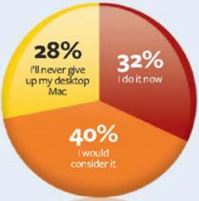
✉ **Victor Navone**

Macworld missed some very important aspects of the Apple TV player. My Apple TV is *always* hot. Apple's tech support said that the unit is always on, even when the light and program are off. The only way to shut it down completely is to unplug it. Additionally, subscribers have only 30 days to start a movie before it is erased. And Blu-ray Disc movies, at a full 1,080 pixels, are only $3.99 at my local rental store, but Apple wants $4.99 for 720-pixel resolution? That's a rip-off in my book.

✉ **Walter Tewsley**

READER POLL

Do you now or would you ever consider using a laptop as your only Mac?



Source: Karlin Associates, 2008

These are just some of the reasons *Macworld* readers gave for choosing a laptop, desktop, or both.

As a video editor, I'd never be able to give up the storage, speed, video cards, multiple monitors, and general expandability of my Mac Pro desktop.

With my MacBook, I have no need for another machine. It sits on my desk during the day and goes to bed with me at night. That way I can check on bank accounts, e-mail, the weather, and Clay Aiken first thing when I wake up.

What I like about a desktop is that there is a central area where I conduct business, with my Wacom tablet, printers, scanner, and phones. I almost feel too casual with a laptop, like I should be wearing pajamas.

Now that I have my iPhone, I am considering *not* having a laptop for the first time.

Desktops are expandable, they run more software, the keyboards are better, and you don't have to consider battery life. Laptops are useful for quick Internet access and small tasks that don't require sitting for a long time.

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IPHONE

Apple Introduces the iPhone 3G

Second-generation phone brings GPS, faster data speeds, and lower price

It may have been the worst-kept secret in the tech world, but Apple CEO Steve Jobs managed to wow the crowd at the recent Worldwide Developers Conference (WWDC) when he showed off the next-generation iPhone at the end of his keynote speech. The iPhone 3G goes on sale July 11—barely a year since the iPhone's debut—in 22 countries, increasing to 70 countries in the months following.

Although it includes many new features, the iPhone 3G's biggest selling point is its price—$199 for the 8GB model and $299 for the 16GB model (the latter will be available in either standard black or white). That's a $200 discount from the previous $399 and $499 prices for the 8GB and 16GB iPhones, respectively (although the wireless data plan will be $10 more per month). And it's a far cry from the $599 price tag when the iPhone was introduced in June 2007.

The iPhone 3G is thinner at the edges than the original model, though it's slightly deeper than the current iPhone. The iPhone 3G is also a tenth of an ounce lighter, at 4.7 ounces.

Also important for many users, the new iPhone features a flush headphone jack instead of the original's recessed headphone jack. This saves users the hassle of having to buy an adapter to connect many third-party headphones.

Faster Data

As its name suggests, the new iPhone will offer support for 3G networking, which Apple says will be twice as fast as that of the first-generation phone. The original iPhone supported Wi-Fi and AT&T's EDGE network. While more ubiquitous at the time than the faster 3G, the EDGE cellular data network offers much slower speeds. (For more about 3G, see "The Portable Office," page 50.)

Jobs demonstrated that fact during his keynote, downloading an e-mail attachment in 5 seconds over 3G while the same download took 18 seconds on the EDGE network. He also showed loading a Web page in 21 seconds on 3G versus 59 seconds on EDGE.

The iPhone 3G offers quad-band GSM and tri-band HSDPA for voice and data connectivity. It will continue to support Wi-Fi and EDGE in addition to 3G.

That last point is critical to users concerned about battery life. iPhone 3G owners will be able to switch between 3G and 2G (EDGE) to save battery life.

However, Jobs boasted that the revamped iPhone improves battery life. Talk time for 2G has jumped to 10 hours, from 8 hours; for 3G talk time, the phone should have a battery life of 5 hours. The

PHOTOGRAPHS COURTESY OF APPLE

3G iPhone also features 300 hours of standby time.

Built-In GPS

Highlighting the other features trumpeted by Jobs is the addition of Global Positioning System (GPS) hardware for real-time mapping. Currently, the iPhone's Core Location function relies on data from cell towers and Wi-Fi transmitters to determine its location. The new iPhone will add GPS to the mix. And because the iPhone 3G's back panel is now shiny plastic instead of metal, the iPhone should have better range and signal strength for Wi-Fi, cellular, and GPS purposes—good news for anyone who has had signal issues with a current iPhone.

The iPhone 3G's biggest selling point is its price—$200 less than previous models with the same capacities.

In a briefing after the keynote, Apple's iPhone marketing manager explained that since GPS works well only with a clear view of the sky, the combination of the different location-finding approaches gives the iPhone three different ways to figure out where you are.

Also, the GPS capabilities will allow for *geotagging* photos—in other words, when you take a picture, the picture will contain metadata indicating exactly where you were on the globe when you took it.

Unlike handheld or car-based GPS receivers, the iPhone 3G won't provide detailed map data—instead, it'll rely on data streamed over digital networks from Google's servers. Into this breach will most likely step third-party software developers: in fact, GPS-maker TomTom says that it's already got iPhone GPS software ready to go. We expect a lot more competition in this area to provide features like voice directions and detailed maps that you can preload on the iPhone, so if your data connection vanishes, you can still find your way.

iPhone 2.0 Software

In addition to hardware changes, the iPhone 3G will also benefit from Apple's iPhone 2.0 software, which adds numerous new features (the update will also be free to current iPhone users, and will be available to iPod touch customers for $10).

During his keynote, Jobs said that the new software will have a search feature for contacts, full support for iWork documents, the ability to view PowerPoint presentations, and a scientific calculator that appears when you launch the Calculator application and rotate the iPhone into landscape mode.

iPhone 2.0 will also have much-sought-after bulk delete and move capabilities in its Mail application, as well as the ability to save images from e-mail messages. It will also open the door for third-party applications (visit macworld.com/3687 for our roundtable podcast with iPhone developers). Apple is also adding parental-control features and has previously discussed iPhone 2.0's enterprise-related features. ☒

Associate Editor **Brian Chen**, Senior News Editor **Jonathan Seff**, and Editorial Director **Jason Snell** contributed to this story.

Tuesday
9
mobile me
Push email, push calendar, and push contacts.

SOFTWARE

Good-bye .Mac, Hello MobileMe

Along with the big iPhone news, Apple announced its rebranding of the .Mac online service at WWDC. The new service adds syncing features aimed at iPhone users in addition to enhanced online access.

Dubbed MobileMe, the new service offers push e-mail, calendars, and contacts that keeps users' information up-to-date whether they're viewing it at a computer or on an iPhone. The Web-based MobileMe works with the iPhone's mail, calendar, and contacts applications in addition to OS X's Mail, iCal, and Address Book on the Mac, and Microsoft Outlook on Windows PCs.

MobileMe's AJAX-enabled Web applications give users an experience similar to desktop software. For example, you can drag and drop calendar events to move them and narrow down contacts as you type. The e-mail software also lets you drag messages into folders to file them away, and it includes a quick reply feature.

MobileMe also offers 20GB of online storage for photos, documents, and files, incorporating the .Mac Web Gallery (you can e-mail photos directly from an iPhone) and iDisk. Current .Mac users will become MobileMe members automatically when the service becomes available in early July, and can continue to use their @mac.com e-mail addresses.

Like .Mac, MobileMe will cost $99 per year.—PHILIP MICHAELS AND JONATHAN SEFF

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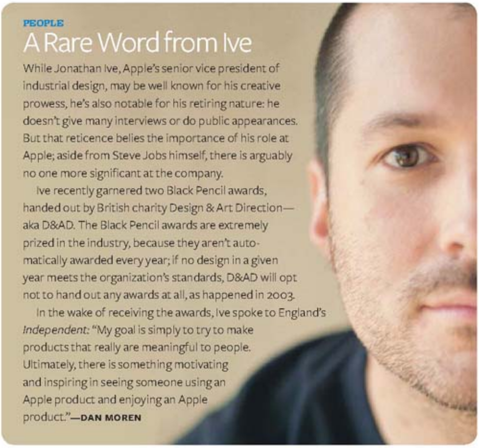

PEOPLE

A Rare Word from Ive

While Jonathan Ive, Apple's senior vice president of industrial design, may be well known for his creative prowess, he's also notable for his retiring nature: he doesn't give many interviews or do public appearances. But that reticence belies the importance of his role at Apple; aside from Steve Jobs himself, there is arguably no one more significant at the company.

Ive recently garnered two Black Pencil awards, handed out by British charity Design & Art Direction—aka D&AD. The Black Pencil awards are extremely prized in the industry, because they aren't automatically awarded every year; if no design in a given year meets the organization's standards, D&AD will opt not to hand out any awards at all, as happened in 2003.

In the wake of receiving the awards, Ive spoke to England's *Independent*: "My goal is simply to try to make products that really are meaningful to people. Ultimately, there is something motivating and inspiring in seeing someone using an Apple product and enjoying an Apple product."—**DAN MOREN**

MUSIC

Napster Reinvents Itself, MP3 Style

Sit back, and I'll spin for you a wondrous tale from the heady days of 1999—an era in which you could get pretty much any song your heart desired just by using a program called Napster, whipped up by Northeastern University student Shawn Fanning. Napster, of course, soon caught the ire of the RIAA (Recording Industry Association of America) and was shut down. It was later acquired by Roxio, which used the name to launch a legitimate online music service.

Now Napster is reinventing itself once again, by providing downloads in MP3 format, which means the downloads are—you guessed it—DRM-free. The big reason for doing so, of course, is that Napster finally gets to tout iPod compatibility. Napster says that it has the world's largest MP3 catalog, with more than 6 million songs (iTunes has about the same number of songs, but not all are DRM-free). Similar to iTunes' pricing, tracks sell for 99 cents and albums typically go for $9.95 (and as with iTunes and Amazon.com, some tracks are available only as part of an album). Most songs are 256 Kbps, and some are 128 Kbps.

At the end of the day, I'm not sure that Napster will be my go-to store, because it currently requires me to use Firefox instead of my normal Safari browser, and because iTunes and Amazon MP3 both trump it in convenience.—**DAN MOREN**

PHOTOGRAPHY COURTESY OF APPLE

PRODUCT WATCH

HARDWARE

E-520, from Olympus (www.olympusamerica.com): A 10.1-megapixel digital SLR, the E-520 comes with in-body image stabilization, face-detection technology, and a Live View feature on the 2.7-inch LCD (body only, $600; $700, with an ED 14–42mm f3.5/5.6 zoom lens).

Jawbone Bluetooth headset, from Aliph (www.jawbone.com): iPhone-compatible headset improves its noise-cancellation technology. It also weighs only 0.35 ounces—50 percent lighter than the previous model ($130).

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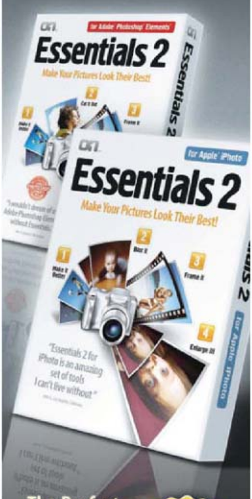
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WEB

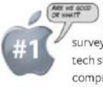
Times Reader Coming to a Mac Near You

One of the cooler innovations of the online *New York Times* (www.nytimes.com) is Times Reader, software that displays the last seven days of stories. This is great for commuters who like reading the news while they're away from the Internet, since Times Reader syncs a week's worth of news content onto your computer.

In the past, this cool program was Windows-only, but a beta version of Times Reader should be available for the Mac by the time you read this. The beta is free to all users; the final version will be free only to *New York Times* home-delivery subscribers.—**DAVID DAHLQUIST**

BUSINESS

Apple Number One in Tech Support


ARE WE GOOD OR WHAT?
#1

We love lists—this time, it's *Consumer Reports* surveying users on the quality of tech support. Among all the computer manufacturers, Apple came in first in both desktops (81 percent satisfaction) and laptops (83 percent). In desktops, Dell was a distant second with 56 percent, while Lenovo took the second notebook spot with 66 percent.

In its report, the magazine cited the Genius Bar as an example of great support, with 90 percent of problems solved there.—**THOMAS GAGNON-VAN LEEUWEN**

SECURITY

Back to My Mac Helps Get Mac Back

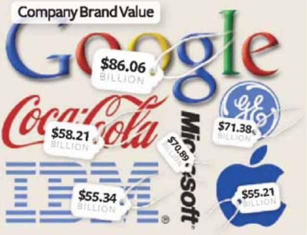
Who says a .Mac (now MobileMe) account is a waste of money? For one White Plains, New York, woman whose Mac laptop disappeared in an apartment burglary, .Mac's Back to My Mac feature actually led to the identification of the culprit and recovery of her Mac.

She activated iPhoto remotely and got a snapshot of the thief, whom her roommate recognized as "that sketchy dude from our party last week." The photos went to the police, and justice was served.—**DAVID DAHLQUIST**

Tech Trends

Apple's Brand On the Rise

Marketers love to talk about "brand value," but what is a recognizable brand really worth? For Apple, a new study says it's $55 billion. The company's brand ranked as the seventh most powerful in the world, up 123 percent in the past year—the second-largest jump among the top 100 brands studied.—MARYANN JONES THOMPSON



Source: Millward Brown Optimor (including data from BrandZ, Datamonitor, and Bloomberg), 2008

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>
> *- Heather Clancy ZDNet.com*

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BUSINESS

Apple Dinged on the Environment Again

A Greener Apple

Despite Apple's big push last year on environmental issues, it seems that the green community still isn't impressed. While Greenpeace marginally raised Apple's ranking in its latest scorecard, nonprofit Climate Counts has a few choice words to say about Cupertino's stance on the environment.

The organization ranks Apple at the bottom of the list for electronics companies, with a score of 11 out of a possible 100. Apple is deemed "a choice to avoid for the climate-conscious consumer." Even second-to-last Nokia scored 37, and IBM led the pack with 77. As with Greenpeace, a lot of Climate Counts's criticisms concern Apple's lack of transparency on environmental issues.

A year after Steve Jobs posted his "A Greener Apple" memo, in which he promised that Apple would provide updates of its efforts and accomplishments "at least annually," all is quiet from corporate HQ. I think it's about time for the company to deliver on at least *that* promise.—**DAN MOREN**

BUSINESS

Forrester Makes Wild Predictions about Apple in 2013

The next five years are going to be very interesting for Apple, if a new report from market research firm Forrester is correct. The company predicts that Apple will rule the digital home by 2013.

Using Apple's history over the past eight years—when the company remade itself from a computer maker to a leader in consumer devices and the digital music market—Forrester says that the precedent has been set for radical change.

Forrester analysts J. P. Gownder and James McQuivey predict that Apple will reengineer the Apple Store and expand into in-home installation services to deliver a fully integrated digital experience. The analysts also expect Apple to release a home server that won't contain the word *server*, and to release a remote that controls music from all of a user's devices, including iPods, home stereos, and computers. Network-enabled digital photo frames and clock radios that stream images and music are also on the list.—**JIM DALRYMPLE**

By the Numbers

$19.4 billion

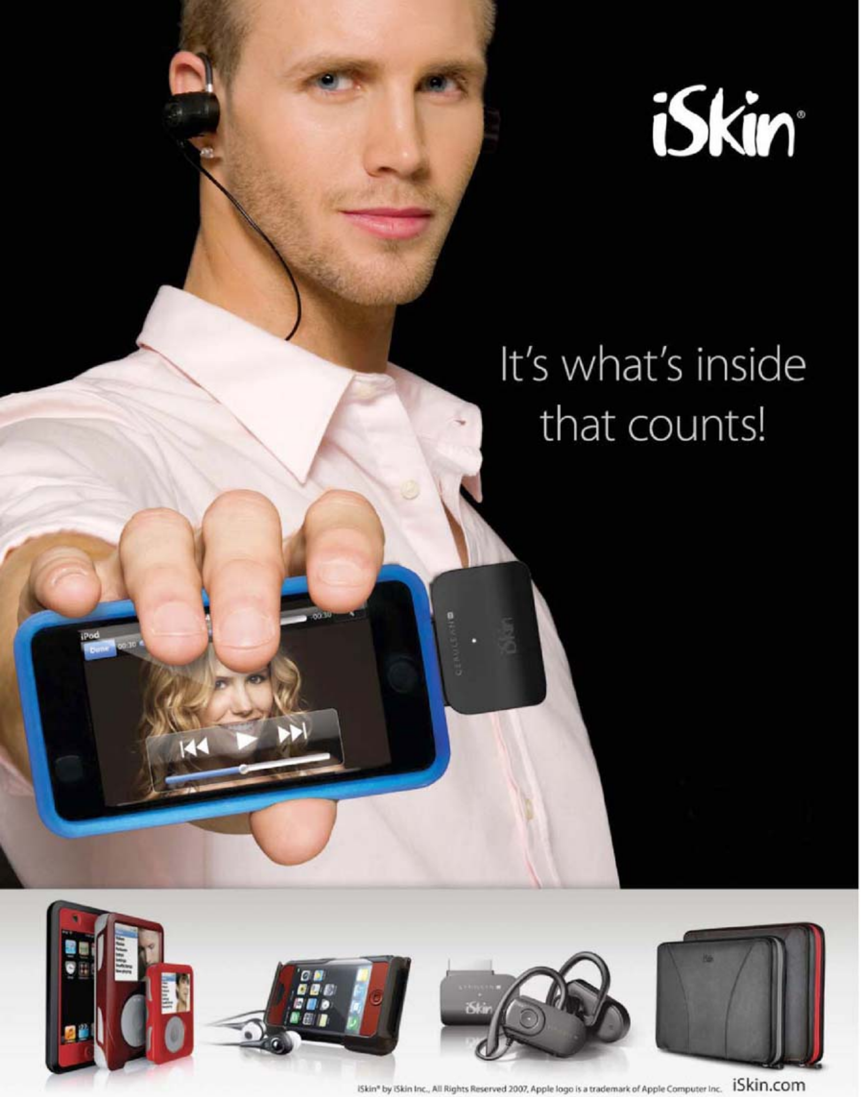
Apple's cash balance at the end of the March 2008 fiscal quarter.

11

Steve Jobs's place on *Forbes*'s most recent "Tech's Top-Paid CEOs" list.

1,000

The number of people the Genius Bar can serve per day at the new Boylston Street Apple Store in Boston.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iPod News

Everything you need to know about digital music on-the-go

The Zune Hits 2 Million Sold—Apple Yawns

Microsoft revealed that it has sold 2 million of its funny little Zune players since their launch in November 2006. This makes for relatively flat growth, and a small gain in overall U.S. market share from 3 percent to a whopping 4 percent. Great job—time for a coffee break.

Meantime, Apple sold 10.6 million iPods in the quarter ending March 31, 2008. So in a single three-month period, Apple moved more than five times as many players as Microsoft has sold in the past year and a half. Coffee break's over.

I still don't understand how a company such as Microsoft, with billions of dollars to pour into R&D for something as simple as an MP3 player, can't seem to innovate half as well as Apple. I guess money only gets you so far. **—DAVID DAHLQUIST**

Sell Unauthorized iPod Accessories, Get Sued

Apple may often find itself under the gavel, but that doesn't mean the company doesn't have cause to launch its own fair share of legal action. Take, for example, the complaint Apple filed against Atico International USA, a "global sourcing and product development supply chain management company."

We don't know exactly what it is that Atico does, but Apple is not thrilled, because the 350,000 products Atico sells apparently include iPod accessories. Totally unlicensed iPod accessories. Hence, Apple is suing Atico for patent infringement.

See, Apple licenses its technology to accessory companies for a fee. Apple is claiming that Atico is not only costing Apple money and infringing on its trademark, but also harming its reputation. On the streets, you know. We'll see how the case progresses.**—DAN MOREN**

AIR NEW ZEALAND INSTALLS iPOD DOCKING STATIONS

The love affair between iPods and airplanes is nothing new—heck, iPods have even traveled to space. According to a report on England's *Times Online* Web site, Air New Zealand is now preparing to expand this relationship even more with the inclusion of Panasonic's X Series in-flight entertainment system in 13 Airbus A320s and five Boeing 767s.

Passengers who own iPods (which is pretty much everyone in the world) and even other media players will be able to hook them up to the system and control the iPods through the custom interface.**—AAYUSH ARYA**

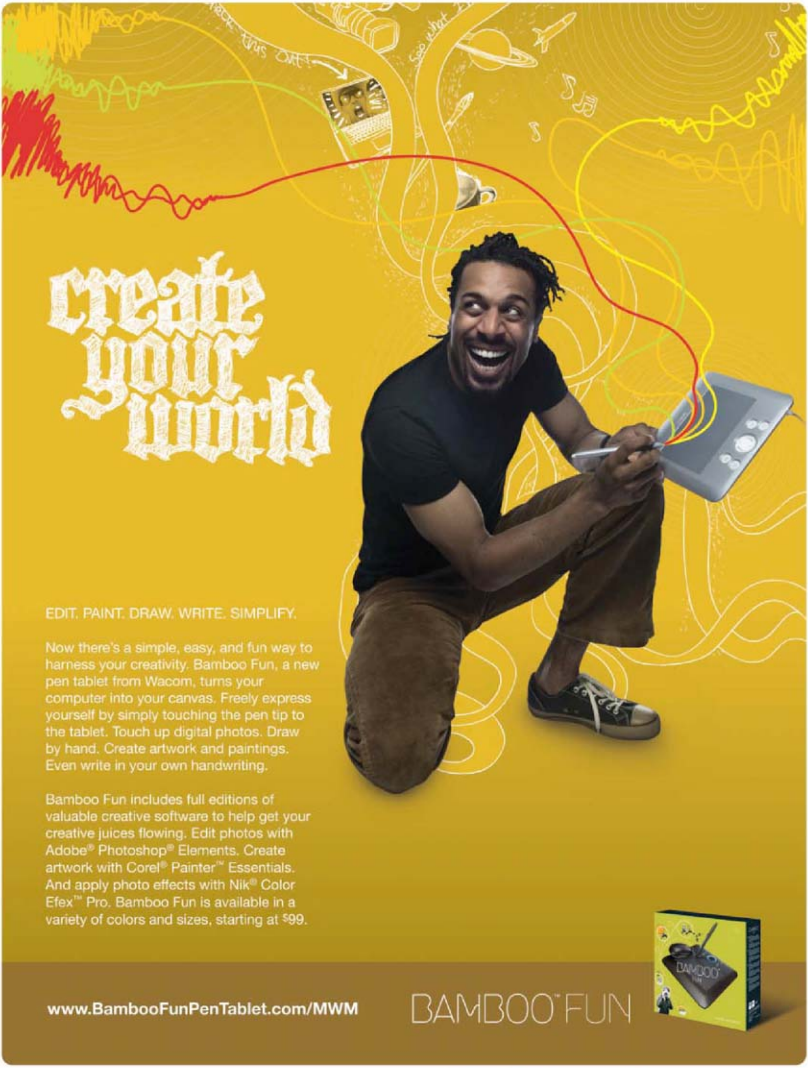
PRODUCT WATCH

SOFTWARE

BurnAgain FS, from freeride-coding (www.freeridecoding.com): CD- and DVD-burning utility enables multisession disc burning using the Finder (€15).

Checkout 2.1, from MYOB (www.checkoutapp.com): Updated point-of-sale software bolsters speed and adds support for custom templates ($399; upgrade, free).

CSS Menu Writer, from WebAssist (www.webassist.com): Extension for Adobe Dreamweaver helps create CSS-based, standards-compliant navigation menus ($100).



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OPERATING SYSTEM

Next Mac OS X Version Dubbed Snow Leopard

In a WWDC keynote dominated by iPhone news, Steve Jobs did offer a bit of OS X–centric news: the next version of OS X is code-named Snow Leopard. In a statement released after the keynote's aftermath, Apple confirmed that Snow Leopard would focus on performance enhancements rather than new features. The update, expected to ship in about a year, will be optimized for multicore processors and enable "breakthrough amounts of RAM." Apple also promised a new media platform with QuickTime X and out-of-the-box support for Microsoft Exchange 2007.—**ROB GRIFFITHS**

ITUNES

iTunes Movies Available the Same Day as DVDs

With Apple's movie selection recently crossing the 1,000-title mark, the iTunes Store has increasingly become a good place to go for your film fix. But with a 30-day lag time between DVD releases of new movies and iTunes Store availability, movie buffs have been left wanting more.

Apple recently rectified this situation by announcing that all the major studios would be making new releases available to Apple the same day that DVDs hit the shelves.

Of course, Apple's press release very clearly states that the new policy applies only to movie purchases, with no mention of rentals. So for now, it's only half good news.—**DAN MOREN**

Activity Monitor

Lifehacker's "Top 10 Things You Forgot Your Mac Can Do"
macworld.com/3632

BusinessWeek ponders whether there's still room for Google's CEO on Apple's board of directors
macworld.com/3634

John Gruber on why Apple won't buy Adobe
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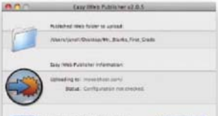
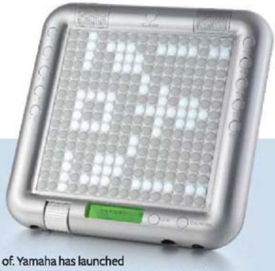
Hot Stuff

What we're raving about this month



Easy iWeb Publisher

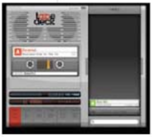
iLife is tightly integrated with Apple's $100-a-year .Mac Internet service. The problem is, what if you don't want to use .Mac? If you're an iWeb user, you can take advantage of most (but not all) of the program's features while using your own hosting service, such as Web-server space offered by your Internet provider. Plyxim's Easy iWeb Publisher (payment requested) bridges the gap nicely, letting you upload all the changed pages on your iWeb site to any Web server by just clicking on a button or dragging your site's folder into the program's Dock icon. It's shameful that Apple doesn't include automatic uploading in iWeb unless you're using .Mac, but Easy iWeb Publisher eases the pain (plyxim.com).—**JASON SNELL**



Tenori-on

Remember the Lite-Brite, the toy dating from the 1960s that let you create colorful pictures with light bulbs and plastic pegs? It's undergone a radical makeover! Well, sort of. Yamaha has launched the $1,200 Tenori-on, an innovative music sequencer composed of 256 LED buttons. Combining the functions of a drum machine and a synthesizer, the Tenori-on visualizes the patterns of creating music with its LED-button landscape. Whether you're a serious electronic musician or a beginner, the Tenori-on's intuitive, inventive design will get your creative juices flowing in no time. Plus, it makes collaborating with others easy and fun. Give your friends a quick tutorial, and you'll be passing around the Tenori-on like a fine cigar (tenori-on.keyfax.com).—**BRIAN CHEN**

TapeDeck



When I was a wee lad, creating a radio show meant lugging around a bulky tape recorder. You can now recapture those days (minus the bulk) with the $25 TapeDeck for Leopard, from Super-MegaUltraGroovy and toastycode. The interface is a note-perfect reconstruction of a classic tape recorder, complete with realistic sound effects, animations, and more (tapedeckapp.com).—**DAN MOREN**

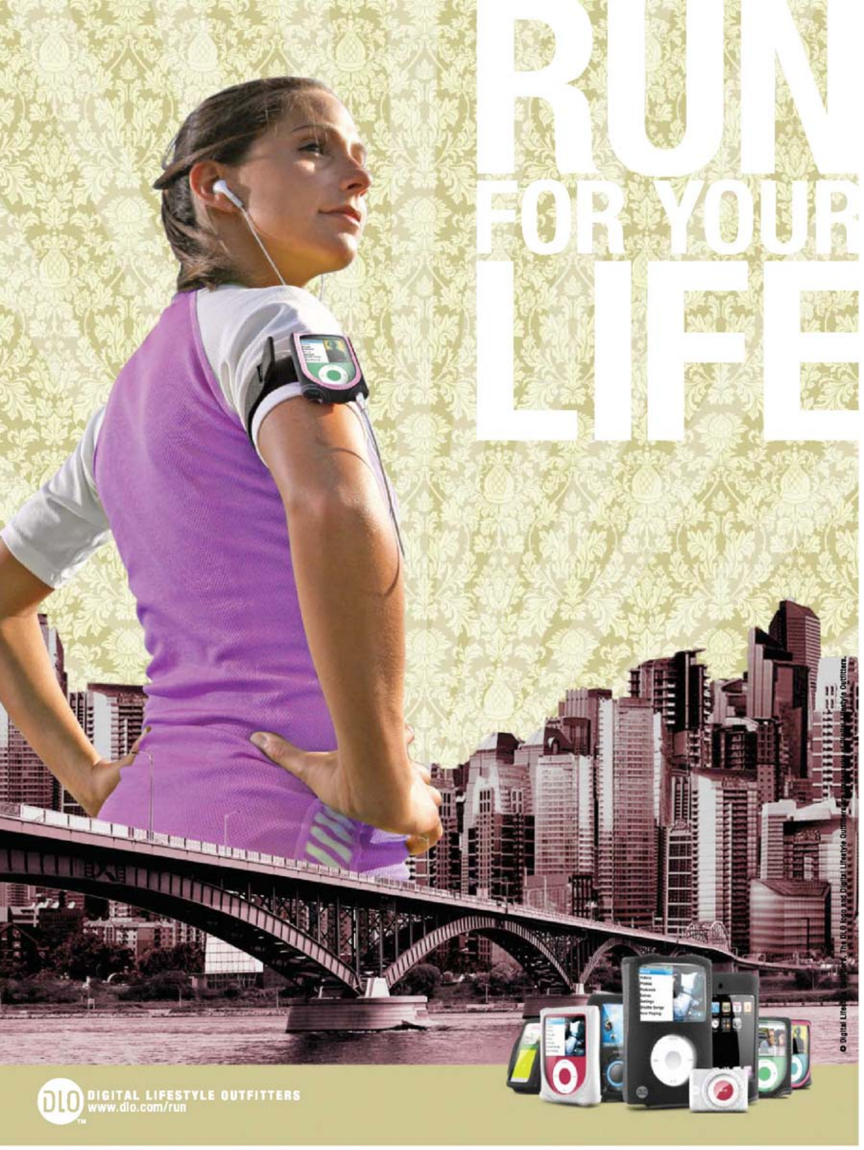
SeeThru Hard Shell for iMac 20-Inch

In a purely practical world, all M&M's would be a dingy white, jewelry would be restricted to medical ID bracelets, and we'd be encased in clothing the color of raw hemp. But people enjoy colorful adornments, and that's exactly what Speck provides with its $50 SeeThru Hard Shell for the 20-inch aluminum iMac. While you can reasonably argue that Speck's similarly priced SeeThru cases for Apple's laptops provide a measure of extra protection, the desktop-bound iMac doesn't need much. Be honest—you want one of these aqua, black, pink, or red shells solely because of your desire for a brightly colored iMac. And that's OK (www.speckproducts.com).—**CHRISTOPHER BREEN**

Duo-i

Thanks to its simple design, intuitive interface, and great sound quality, Boston Acoustics' Recepter Radio has been on my nightstand for several years. The company has recently beefed up the Recepter's basic design to include stereo speakers, a larger enclosure, an iPod dock with video output, a remote control, two auxiliary-input jacks, headphone and line-level outputs, an ambient light sensor that automatically adjusts the screen brightness, and a wraparound touch-sensitive snooze ring. The result is the $250 Duo-i, a full-featured audio system that includes the Receptor's clock-radio functions and much more, and it comes in white or dark gray (www.bostonacoustics.com).—**DAN FRAKES**

TENORI-ON PHOTOGRAPH BY PETER BELANGER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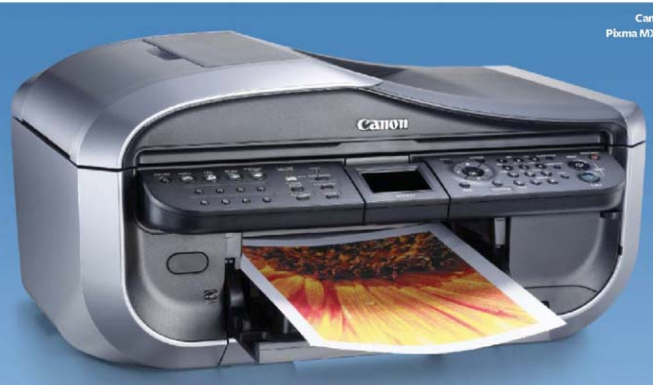
Reviews


Canon's Pixma MX850

Jacks of All Trades

MFPs: One-stop shops for prints, scans, copies, and faxes

BY BRIAN CHEN

A multifunction printer (MFP) combines a printer, scanner, copier, and fax machine into one space-friendly device. Some MFPs specialize in the tasks of the creative professional, like photo printing and scanning. Other MFPs meet the needs of a typical business, emphasizing speed.

Your work will determine which MFP is right for you. To help you make a decision, Macworld Lab put three laser MFPs and three ink-jet MFPs to the test. Each device caters to a certain consumer group. There are trade-offs with every MFP, so consider your needs carefully.

Ink-Jet or Laser?

The primary function of an MFP is to print, so you must first decide whether you need an ink-jet or a laser MFP.

Ink-jet MFPs emphasize print quality over speed, and some MFPs can print lab-quality photos. An ink-jet MFP is more affordable initially than a laser MFP, but the cost of replacement ink cartridges adds up quickly to eventually exceed the cost of the ink-jet itself. (There's also the cost of ink-jet paper, which improves the overall print quality, but all ink-jet printers also print on plain paper.) Ink-jet MFPs better suit individual users or small offices that demand top-notch image quality for graphics and photos. If you're operating on a budget and print fewer than 50 pages a month, consider buying an ink-jet MFP.

Laser MFPs print faster than ink-jets, and their ability to create crisp fine lines on plain paper produces professional-looking text and business graphics. Laser MFPs handle high volumes of printing—thousands of pages per month as opposed to hundreds on an ink-jet. The cost of replacing toners may seem hefty—$80 per cartridge on average—but given their high yields of thousands of pages per cartridge, laser MFPs are less expensive to use over time. Laser MFPs are better for office environments in which speed, high volume, and clean text—not photographic quality—take priority.

Keep in mind that MFPs are typically designed for the budget-conscious; the idea is to pay less for an MFP than you'd pay for a printer, scanner, copier, and fax machine separately. You won't find an MFP with, say, a professional-level photograph printer and scanner for under $300. If you're that serious about photos, you're better off buying a professional, stand-alone printer and a premium scanner.

For a review of three ink-jet MFPs, read on. If you've decided you need a color laser MFP, see "Color Laser Multifunction Printers."

PHOTOGRAPHY BY PETER BELANGER

Ink-Jet MFPs: SOHO, Photo Printing, Personal Projects

Ink-jet MFPs are ideal for individual users working on creative projects, for a home office, or for a small business. The three ink-jet MFPs we reviewed turned out to be impressive performers and reasonably affordable.

Epson's $199 Stylus Photo RX680 is a six-color MFP equipped with a 1,200-dpi flatbed scanner and high-quality printer. With a scanner and fax machine, Canon's $280 Pixma MX850 uses a special pigment black to achieve exceptional, laser-like clarity in text prints. Last but not least, Hewlett-Packard's $300 Photosmart C7280 is a six-color MFP that includes print, scan, copy, and fax capabilities.

Easy Setup and Control

Compared with stand-alone ink-jet printers, ink-jet MFPs are bulky. The C7280, MX850, and RX680 all weigh about 25 to 30 pounds. The C7280 has the shortest width and depth—10 inches and 17 inches, respectively. The MX850 is the space hog of the batch, measuring 19 inches wide and 20 inches deep.

Each one of these MFPs is a breeze to set up. They can connect to your Mac via USB, which is as easy as plug-and-play once you install the software drivers. If you want to share your ink-jet MFP over a network, you must have an MFP with a network connection. The RX680 is designed primarily for handling personal, creative projects, and it connects only via USB (you have to supply your own USB cable), while the C7280 and MX850 are aimed at the small-office market, and include Ethernet ports for sharing over a network. The C7280 also supports 802.11g wireless connectivity.

If you're operating on a budget and print fewer than 50 pages a month, consider buying an ink-jet MFP.

MFPs are designed so you can use most of their functions without your Mac. Fortunately, all three of these MFPs feature intuitive control panels, as well as bright, colorful screens that clearly display options. All the MFPs also have slots for the most commonly used camera memory cards, so you can print directly from the card.

The MFPs we tested hold at least 100 sheets of plain paper; the RX680 can hold even more—up to 270 sheets. And each can print on several different paper sizes, including 4 by 6, 5 by 7, and 8 by 10 (see "Multifunction Printers: Test Results and Specifications" for a complete listing of supported paper sizes for each printer).

Fax Away

One of the reasons the C7280 and MX850 cost about $100 more than the RX680 is that they include a fax machine. Both of these MFPs are capable of color faxing (though the receiving fax machine must be able to print in color). To speed up the faxing process, the C7280 and MX850 each include an automatic document feeder. And you can configure the C7280's fax to work with a DSL line.

Keep in mind that faxing isn't the only way to send a document electronically. You can always scan a document and send it via e-mail; the RX680 includes a scan-to-e-mail button. But if you have multiple pages, you must manually scan each page, a tedious process. The scan-to-e-mail option is nice to have, however, if you plan to fax only on occasion. You can also try a Web-based fax service, such as Fax Zero (faxzero.com).

Canon Pixma MX850

●●●●½

PROS: Speedy; user-friendly; superior text quality is comparable to that of laser printers; includes duplexer and automatic document feeder.

CONS: Scan resolution is slightly fuzzy and jagged; some colors look muted in scan output.

PRICE: $280

COMPANY: Canon, www.canon.com

FULL REVIEW: macworld.com/3593

Epson Stylus Photo RX680

●●●●½

PROS: Great print quality; fast print speeds; dual paper trays; built-in duplexer; built-in card reader; CD printing.

CONS: Uninspiring software bundle; no OCR software.

PRICE: $199

COMPANY: Epson, www.epson.com

FULL REVIEW: macworld.com/3594

Hewlett-Packard Photosmart C7280

●●●●

PROS: Superb text and graphics; built-in duplexer; automatic document feeder; versatile connectivity.

CONS: Photo scans and prints could be better; occasional wireless dropouts.

PRICE: $300

COMPANY: Hewlett-Packard, www.hp.com

FULL REVIEW: macworld.com/3581

Color Laser Multifunction Printers

If speed, high print volume, and top-quality business documents are your top priorities, invest in a color laser MFP. We tested Brother's MFC-9840CDW and Lexmark's X560n, high-end, sub-$1,000 color laser MFPs designed for medium-size workgroups. (We also tested a low-end monochrome laser MFP for home-office users, Samsung's $300 SCX-4500. Read "Black-and-White Is Beautiful" to see how it fared.)

The Lexmark X560n (left) and the Brother MFC-9840CDW.

Smooth Setup (Sometimes)

The X560n and MFC-9840CDW are hefty machines, each weighing more than 80 pounds, and both take up a large amount of space. Color laser MFPs like these two models require cautious handling; if you install toner cartridges improperly, you can damage the unit, so follow the instructions carefully.

Setting up the MFC-9840CDW was straightforward. You have three connection options: Ethernet, USB 2.0, or 802.11b/g wireless. Connecting via USB is simple, and when we plugged in the device via Ethernet, the MFC-9840CDW automatically appeared as a Bonjour printer. The trickiest connection setup was for Wi-Fi, which required setting up IP printing. The user manual does a good job of directing you through this process.

Unfortunately, we had an extremely difficult time setting up the X560n's scanner, which resulted in many e-mails and phone calls to Lexmark. Macworld Lab and even a Mac user at Lexmark's headquarters could not set up the X560n's scanner following Lexmark's instructions. So Lexmark rewrote its Mac instructions to make the scanning installation clearer, and we were able to set up the X560n. Lexmark said it would publish an updated version of the X560n's manual.

Higher-end laser MFPs like the X560n and the MFC-9840CDW are designed to cater to busy offices. Both MFPs have similar feature sets, with fax support, a flatbed scanner, Ethernet, and an automatic document feeder, as well as a speedy color laser printer. Interestingly, you'll get more bang for your buck with the MFC-9840CDW; for about $200 less than the X560n, the MFC-9840CDW comes with perks such as a duplexer and wireless networking.

Fast Laser Beams

The MFC-9840CDW and X560n were neck and neck in print speed for business documents. The MFC-9840CDW took just 15 seconds to print a one-page Word document and 39 seconds to print a ten-page Word document. The X560n took 15 seconds and 31 seconds, respectively, to perform the same tests.

For scanning, the MFC-9840CDW was also fast, taking 1 minute and 11 seconds to scan an 8-by-10-inch photo. The X560n took 1 minute and 10 seconds to perform the same test.

Laser Sharp

In our color photo test print, the X560n's colors looked dull, blacks appeared flat, some fine details were lost, and blues were oversaturated. In our Graphics, Fine Lines, and Gradients test, the X560n earned a Good rating; graphics and gradients looked pleasing, but noticeable bends appeared in fine lines. The X560n earned a Very Good rating for text quality. The X560n's scanner output looked decent, but reds appeared oversaturated and blacks looked flat, earning it a Good rating.

The MFC-9840CDW produced crisp and clear text, earning a Very Good rating for text quality. In our color photo test print, colors were light, but the image looked pleasing overall, earning another Very Good rating. The scanner's output looked slightly darker compared with our control image, but fine details were captured and the overall composition was clear and realistic.

Macworld's Buying Advice

The clear winner was the MFC-9840CDW. For $800, the user-friendly MFC-9840CDW offers plenty of useful features that busy office workers will appreciate. Its print and scan quality are among its strengths. The X560n was so difficult to set up that it couldn't even compete.

Brother MFC-9840CDW

PROS: Fast; duplexer; wireless; automatic document feeder; great scans and prints.

CONS: Scanner software lacks options; wireless printing setup is tricky.

PRICE: $800

COMPANY: Brother, www.brother.com

FULL REVIEW: macworld.com/3595

Lexmark X560n

PROS: Fast; prints clean, legible text.

CONS: Image prints look flat and unattractive; difficult scanner setup.

PRICE: $999

COMPANY: Lexmark, www.lexmark.com

FULL REVIEW: macworld.com/3596

Multifunction Printers: Test Results and Specifications

	INK-JETS			LASERS		
	Photosmart C7280 Hewlett-Packard	**Pixma MX850** OUR PICK Canon	**Stylus Photo RX680** Epson	**MFC-9840CDW** OUR PICK Brother	**SCX-4500** Samsung	**X560n** Lexmark
RATING	★★★★	★★★★½	★★★★½	★★★★	★★★½	★★★
PRICE	$300	$280	$199	$800	$300	$999
TIMED TRIALS[A]						
PRINT TEST: 10-PAGE WORD DOCUMENT	1:50	**1:17**	2:07	0:39	0:46	**0:31**
PRINT TEST: 1-PAGE WORD DOCUMENT	0:17	**0:16**	0:23	0:15	**0:13**	0:15
PRINT TEST: 22MB PHOTOSHOP IMAGE	2:22	**0:59**	1:52	**0:44**	N/A	1:57
PRINT TEST: 4-PAGE PDF	1:48	1:26	**1:13**	0:35	**0:31**	0:40
SCAN TEST: 8 × 10 PHOTO AT 600 DPI	1:40	**0:28**	1:08	1:11	1:17	**1:10**
SCAN TEST: 4 × 6 PHOTO AT 1,200 DPI	2:20	**0:37**	2:19	2:02	**1:18**	results not available[B]
JURY TESTS[C]						
PRINT QUALITY: GRAPHICS, FINE LINES, AND GRADIENTS	**Very Good**	**Very Good**	**Very Good**	**Good**	**Good**	**Good**
PRINT QUALITY: 22MB PHOTOSHOP IMAGE	Very Good	Very Good	**Superior**	**Very Good**	N/A	Fair
PRINT QUALITY: TEXT	**Superior**	**Superior**	Very Good	**Very Good**	Good	**Very Good**
SCAN QUALITY: PHOTO	Good	Good	**Very Good**	**Very Good**	**Very Good**	Good
SCAN QUALITY: RESOLUTION CHART	Good	Good	**Very Good**	**Very Good**	Good	Good
COPY QUALITY	**Very Good**	**Very Good**	**Very Good**	Good	**Very Good**	Good
SPECIFICATIONS						
PRINT RESOLUTION	4,800 × 1,200 dpi (color); 1,200 dpi (black)	9,600 × 2,400 dpi (color); 600 × 600 dpi (black)	5,760 × 1,440 optimized dpi	2,400 × 600 dpi	600 × 600 dpi	600 × 600 dpi
SCAN RESOLUTION	4,800 dpi	4,800 × 9,600 dpi	1,200 dpi	1,200 × 2,400 dpi	600 × 2,400 dpi	600 × 600 dpi
MAXIMUM SCANNING BIT DEPTH	48-bit	48-bit	48-bit	48-bit	24-bit	48-bit
CONNECTION	Ethernet; USB 2.0; wireless 802.11g; optional Bluetooth 2.0	Ethernet, USB 2.0	USB 2.0; optional Bluetooth 2.0	Ethernet, 802.11b/g wireless, high-speed USB 2.0	USB 2.0	Ethernet, USB, Parallel
PAPER SIZES (IN INCHES)	4 × 6, 4 × 8, 5 × 7, 8 × 10, legal, letter, no. 10 envelopes	2L, 4 × 6, 5 × 7, 8 × 10, A4, A5, B5, L, letter	3.5 × 5 (index card), 4 × 6, 4 × 8, 5 × 7, 8 × 10, legal, letter, no. 10 envelopes	A4, A5, A6 envelopes, B5, B6, executive, folio, legal, letter, custom sizes (2.75 to 8.5 wide, 4.57 to 16 long)	A4, A5, A6, executive, ISO B5, JIS B5, letter	7.75 envelope, 10 envelope, A4, A5, C5 envelope, DL envelope, executive, folio, JIS-B5, legal, letter, statement, universal
POSTSCRIPT VERSION (LASER ONLY)	N/A	N/A	N/A	PCL-6, BR-Script 3 (emulation)	None	PCL-6, Adobe PostScript 3
INSTALLED RAM/MAXIMUM RAM[D]	N/A	N/A	N/A	128MB/640MB	8MB	384MB/1,408MB
COST TO REPLACE INK OR TONER CARTRIDGES[E]	$68 ($18 for black cartridge; $10 each for cyan, magenta, yellow, light cyan, and light magenta)	$73.25 ($16.25 for pigment black; $14.25 each for black, yellow, magenta, and cyan)	$120 ($20 each for black, cyan, magenta, yellow, light cyan, and light magenta)	$270 ($60 for black; $70 each for cyan, magenta, and yellow)	$80 for black	$828 ($210 for black; $206 each for cyan, magenta, and yellow)
WEIGHT (IN POUNDS)	24.3	30.7	27.6	83.2	18.9	88.2
DIMENSIONS (HEIGHT × DEPTH × WIDTH, IN INCHES)	17.7 × 17.5 × 9.8	10.2 × 19.0 × 20.0	17.6 × 25.5 × 13.0	30.1 × 32.4 × 26.7	6.5 × 15.5 × 13.0	28.7 × 20.7 × 18.1
PAPER CAPACITY	100 sheets (20 sheets in photo tray)	150 sheets	270 sheets	250 sheets	100 sheets	400 sheets
SPECIAL FEATURES	duplex printing, 2.4-inch TFT display	duplex printing, automatic document feeder	duplex printing, 2.5-inch TFT display	wireless connectivity, duplex printing, automatic document feeder	touch-sensitive control panel	automatic document feeder

N/A = not applicable. [A] Measured in minutes:seconds. Best results in **bold**. [B] The X560N scanner is 600 by 600 dpi. [C] Scale is Superior, Very Good, Good, Fair, and Poor. Best results in **bold**. [D] Many ink-jet manufacturers do not report installed RAM. [E] Yields may vary.

Image-Quality Check

Our panel of experts examined the output from these three ink-jet MFPs and rated them as Superior, Very Good, Good, Fair, and Poor.

When it came to print quality, all three machines performed very well—but in different areas. The RX680 was the best photo printer, earning a Superior rating for its ability to produce superb, vibrant prints on both glossy and matte papers; the MX850 and C7280 both earned Very Good ratings for photo prints. The MX850 and C7280 tied for printing the clearest, most-legible text, earning a Superior rating; the RX680 scored a Very Good. All three MFPs tied for their ability to reproduce business graphics (charts and graphs), earning a Very Good.

The competition wasn't as close for scanning. You may have noticed that the RX680, despite being a photo-quality MFP, has a scanner with an optical resolution of 1,200 dpi—which may seem meager compared with the C7280's 4,800-dpi and the MX850's 4,800-by-9,600-dpi scanners. There's a lot more to scan quality than resolution-image sensors, charge-coupled devices, and so on. The C7280 and MX850 might have higher-resolution scanners, but in our testing, the RX680 came out the winner, earning a Very Good rating for its ability to reproduce colors accurately and preserve clarity and fine details. The C7280 and MX850 both earned Good ratings for their scanners: with these two MFPs, color fidelity was slightly lost, and images appeared a bit lackluster.

Ready, Set, Go

The MX850 won the race in both prints and scans, taking 16 seconds to print a one-page Word document, 59 seconds to print an 8-by-10-inch color photo, and just under 30 seconds to scan an 8-by-10-inch color photo at 600 dpi. The C7280 was slower, taking 17 seconds to print the one-page document, 2 minutes and 22 seconds to print an 8-by-10 photo, and 1 minute and 40 seconds to scan an 8-by-10 photo.

The RX680 had the slowest print speed for the Word document test, taking 23 seconds, but output an 8-by-10-inch photo in 1 minute and 52 seconds. And the RX680 was relatively speedy at scanning, taking 1 minute and 8 seconds to scan an 8-by-10-inch photo at 600 dpi.

Macworld's Buying Advice

The MFP that's best for you depends on your needs. The Epson Stylus Photo RX680—which outputs and scans superb photos—is an excellent choice for the more artistically inclined. For the home office worker, the Canon Pixma MX850 might be a better choice given its ability to produce exceptionally clear documents at very fast speeds for an ink-jet MFP. But if you're especially concerned with an immaculate, spacious workplace, the HP Photosmart C7280's wireless-networking option is a nice perk in an already impressive device. Overall, the MX850's combination of speedy printing, high-quality text documents and photos, and an impressive feature set made it our top pick.

Brian Chen is a *Macworld* associate editor.

Black-and-White Is Beautiful

For the cost-conscious, a monochrome MFP like Samsung's SCX-4500 is a welcome choice. It offers good black-and-white laser prints and color scans.

The 19-pound, USB-only SCX-4500 includes scanning, copying, and printing functions. A small hook serves as the output paper tray, but it can't hold many sheets. The SCX-4500 features an intuitive, touch-sensitive control panel with only seven buttons.

The SCX-4500's speed is impressive. It took just 13 seconds to print a one-page Word document and 46 seconds to print a ten-page Word document. The SCX-4500 took 1 minute and 17 seconds to scan an 8-by-10-inch photo.

For text quality, the SCX-4500 earned a Good rating; we've seen sharper text from other laser printers, and the machine's print quality lost integrity at finer point sizes. On our Graphics, Fine Lines, and Gradients test, the SCX-4500 earned another Good rating; fine lines were clean and well preserved, gradients looked flushed and weren't well distinguished, and graphics looked professional though a bit dotty. The SCX-4500 earned a Very Good rating for photo scanning; the SCX-4500's scan output looked pleasing, though bluish.

Macworld's Buying Advice

It wouldn't be fair to compare Samsung's MFP with the two color laser MFPs we reviewed (see "Color Laser Multifunction Printers"). A better question for the home-office user who's mulling a buying decision is whether to go for this MFP or one of the ink-jets. We think Canon's Pixma MX850, which costs $20 less and prints Superior-rated text at high speeds, would be a wiser investment.

Samsung SCX-4500

PROS: Speedy scanner and printer; quiet; user-friendly; good scan and print quality; flexible scanning options.

CONS: Print quality loses integrity at finer point sizes; printer lacks an output tray; scans appear soft; copies are grainy.

PRICE: $300

COMPANY: Samsung, www.samsung.com

FULL REVIEW: macworld.com/3507

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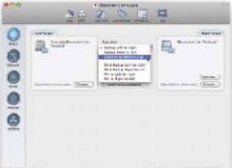
What we're reviewing online this month

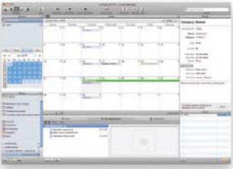


SOFTWARE

ChronoSync 3.3 △

RATING: ★★★★ **PRICE:** $30 **COMPANY:** Econ Technologies **URL:** econtechnologies.com

ChronoSync 3.3.6 is about as full featured as synchronization programs get. It's easy enough for a novice to use immediately, but has enough geeky options to satisfy the most demanding propeller-head. The program gives you a great deal of control over every aspect of file synchronization. Although users will have to wait for the next release to get proper copying of file ownership and bootable duplicates, the current version of ChronoSync can meet virtually any other synchronization need (macworld.com/3640).



Contactizer Pro 3.6 △

RATING: ★★★★ **PRICE:** $120 **COMPANY:** Objective Decision **URL:** objective-decision.com

Contactizer Pro 3.6.1 is a single application that includes integrated features for managing contacts, tasks, calendars, e-mail communication, syncing, and projects. The program is nice-looking and largely intuitive, and it includes nearly all of Apple's Address Book and iCal features. It also comes with some unique extras, such as a maps area within the application, as well as the ability to search White and Yellow Pages directories from within the program. But it lacks features such as iPhone syncing and support for publishing and subscribing to calendars, which means that some people won't be able to rely solely on Contactizer Pro for their task- and content-management needs (macworld.com/3641).

FoldersSynchronizer X 3.6

RATING: ★★★ **PRICE:** $40 **COMPANY:** Softobe **URL:** www.softobe.com

Session 1
Folders Synchronizer X
Synchronize

FoldersSynchronizer X 3.6.3 has a small and unassuming, though somewhat unintuitive, single-window interface that belies a full-featured and reasonably capable file-synchronization utility. Once you learn your way around, you can get FoldersSynchronizer X to do most of the syncing tasks you need. But the interface is unnecessarily obscure, and having to keep the program running all the time for scheduled syncs to occur is inconvenient (macworld.com/3642).

Google Calendar

RATING: ★★★★ **PRICE:** free **COMPANY:** Google **URL:** www.google.com

In the increasingly connected world we live in, it makes sense for many people to manage their calendars online so that they can access their information wherever they are and whenever they want—provided, of course, that they have an Internet connection. For people already using Google services such as Gmail, having Google Calendar manage your schedule is a logical choice. With an easy-to-use, intuitive interface, and just enough sophistication to keep any power user satisfied, Google Calendar is hard to beat (macworld.com/3643).

Papers 1.8 △

RATING: ★★★★½ **PRICE:** $42 **COMPANY:** Mekentosj **URL:** mekentosj.com/papers

Academic life has evolved from one of piles of papers on a desk to folders chock-full of PDF files on a hard drive. On the Mac, Spotlight can help you locate specific documents, but serious organization requires even more structure: enter Papers 1.8, an article-library utility from Mekentosj. Papers is a great program for organizing academic file cabinets, and it makes searching and organizing papers for reading and referencing an almost-enjoyable task (macworld.com/3644).

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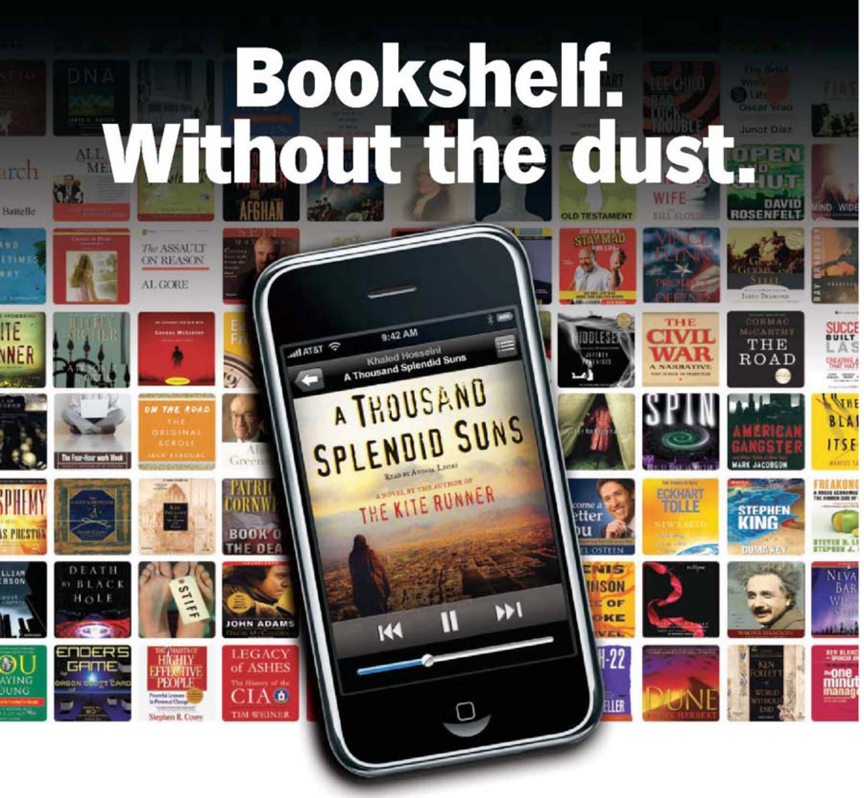
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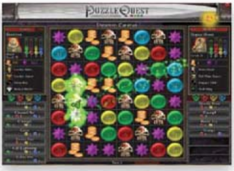

Puzzle Quest: Challenge of the Warlords △

RATING: ●●●◐ **PRICE:** $20 **COMPANY:** TransGaming **URL:** transgaming.com

Mixing elements of role-playing games with match-three puzzle games seems like an unlikely combination, but Puzzle Quest makes the mashup work. The RPG components are familiar: your character embarks on quests and gains experience points. Combat takes the form of a match-three puzzle game similar to Bejeweled, in which you move colored pieces one at a time on a grid-based game board to create a horizontal or vertical line of three or more of the same pieces. Puzzle Quest is a unique mélange that offers challenging game play (macworld.com/3587).

HARDWARE

Orbit-MP3

RATING: ●●●

PRICE: $30 **COMPANY:** Altec Lansing **URL:** www.alteclansing.com

Altec Lansing's Orbit-MP3 is a portable speaker measuring just 3.63 inches in diameter, but its sound quality is surprisingly good. The Orbit-MP3's audio is clean and distortion-free. Midrange sounds are what the Orbit-MP3 does best; notes on the very high end couldn't be reached. You can easily tote it around town or carry it on a trip, and its sound quality is much better than that of other portable speakers in this price range. Now if only it included a power adapter (macworld.com/3645).

Super.fi 4vi

RATING: ●●●● **PRICE:** $150 **COMPANY:** Ultimate Ears **URL:** www.ultimateears.com

The super.fi 4vi is an iPhone headset: a set of stereo in-ear headphones with an in-line microphone for talking on the phone and an in-line controller for taking calls and for basic music-playback control. The attractive aluminum earpieces are small and comfortable; the 4vi's microphone performance is excellent; and sound quality is especially good in the treble and midlevel ranges. Bass response, however, is less impressive, and the controller button can be difficult to press. As with many in-ear headphones, the sound of your own voice is very loud when you're wearing the 4vi (macworld.com/3647).

ViewSonic VP2250wb △

RATING: ●●● **PRICE:** $559 **COMPANY:** ViewSonic **URL:** www.viewsonic.com

ViewSonic's VP2250wb is a 22-inch LCD monitor with 1,680-by-1,050-pixel wide-screen resolution. It has a DVI port for connecting to almost any modern Mac, and an analog VGA port for connecting older Macs or PCs. It features a fast two-millisecond response time—good for watching movies or playing games. The VP2250wb is a decent consumer-level display, but you will need to calibrate it to improve the color, and its narrow viewing angle limits the display's usefulness in collaborative work and entertainment environments. (macworld.com/3648).

Printer Power

Photosmart Pro B8850

RATING: ●●●● **PRICE:** $550 **COMPANY:** Hewlett-Packard **URL:** www.hp.com

The entry level of the archival-quality photo-printer market is heating up, in part due to the release of Hewlett-Packard's Photosmart Pro B8850. This model produces high-quality color and great black-and-white photos that are rich and detailed, with no visible color cast on most papers. HP makes it easy to print on alternative paper types without jumping through hoops. The B8850 also comes with a nice suite of utilities for managing the printer, including a Dashboard widget that displays the current ink levels in each cartridge and a basic application for printing photos (macworld.com/3650).

Stylus Photo R1900

RATING: ●●●●◐ **PRICE:** $549 **COMPANY:** Epson **URL:** www.epson.com

Epson's Stylus Photo R1900 uses pigment inks to produce long-lasting, borderless photographic prints at sizes up to 13 by 19 inches. It's one of the lowest-priced pigment printers available, and for glossy photos, you'll find that there's no better printer on the market right now. It also does a great job on matte and fine-art papers, and it's quite speedy as well (macworld.com/3649).

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Top Products

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PRINTERS

LASER PRINTER

C6100dn

RATING: ●●●●½
PRICE: $799
COMPANY: Oki Data
URL: www.okidata.com

The C6100dn, from Oki Data, produces great-looking prints and includes built-in duplexing. It also offers easy network connectivity and quick printing speeds (macworld.com/1670).

INK-JET PHOTO PRINTER

Stylus Photo 1400

RATING: ●●●●
PRICE: $278
COMPANY: Epson
URL: www.epson.com

Epson's Stylus Photo 1400 prints photos that are rich in both color and detail. Capable of outputting images as large as 13 by 19 inches, this printer is surprisingly well priced, without compromising on quality (macworld.com/2924).

COMPACT PHOTO PRINTER

PictureMate Zoom PM 290

RATING: ●●●●½ **PRICE:** $230 **COMPANY:** Epson
URL: www.epson.com

Affordable, problem-free, and enjoyable to use, the PictureMate Zoom is the speediest and best overall portable photo printer on the market (macworld.com/3102).

MULTIFUNCTION INK-JET

Pixma MX850

RATING: ●●●●½ **PRICE:** $243 **COMPANY:** Canon
URL: www.canon.com

NEW The MX850 prints crisp, legible text that's comparable to laser quality. Add to that speedy performance, solid print results, and extra perks, and you have a superb multifunction printer (macworld.com/3593).

MACS

PRODUCT	PROCESSOR	RATING	PRICE[A]	DISPLAY	SPEEDMARK 5 SCORE[B]	FIND CODE[C]
DESKTOP						
iMac	Intel Core 2 Duo/2.4GHz	●●●●	$1,194	20 inches	230	3597
	Intel Core 2 Duo/2.66GHz	●●●●	$1,494	20 inches	254	3598
	Intel Core 2 Duo/2.8GHz	●●●●½	$1,750	24 inches	268	3599
Mac mini	Intel Core 2 Duo/1.83GHz	●●●●	$589	not included	159	3030
	Intel Core 2 Duo/2GHz	●●●●	$775	not included	172	3031
Mac Pro	Intel Xeon/ two quad-core 2.8GHz	●●●●½	$2,599	not included	314	3363
PORTABLE						
MacBook	Intel Core 2 Duo/2.1GHz	●●●●	$1,030	13 inches	180	3464
	Intel Core 2 Duo/2.4GHz	●●●●½	$1,260	13 inches	193	3465
	Intel Core 2 Duo/ 2.4GHz (black)	●●●●½	$1,400	13 inches	196	3466
MacBook Air	Intel Core 2 Duo/1.6GHz	●●●½	$1,640	13 inches	124	3364
MacBook Pro	Intel Core 2 Duo/2.4GHz	●●●●½	$1,835	15 inches	204	3467
	Intel Core 2 Duo/2.5GHz	●●●●½	$2,280	15 inches	222	3468
	Intel Core 2 Duo/2.5GHz	●●●●½	$2,400	17 inches	219	3469

[A] From a PriceGrabber survey of retailers as of June 10, 2008. [B] Speedmark 5 is Macworld Lab's standard test tool for benchmarking systems running Mac OS X 10.5 (Leopard). For information on Speedmark testing, go to www.macworld.com/speedmark. [C] Typing in find codes after *macworld.com/* directs you to a product's review or overview. For example, macworld.com/3364 contains an overview of the 1.6GHz MacBook Air.

MULTIFUNCTION LASER

MFC-9840CDW

RATING: ●●●●
PRICE: $740
COMPANY: Brother
URL: www.brother-usa.com

The MFC-9840CDW is not only a great all-in-one color laser printer, scanner, copier, and fax machine, but also has bonus features, such as a duplexer and wireless connectivity, that make it an outstanding value (macworld.com/3566).

FLATBED SCANNER

Perfection V700 Photo

RATING: ●●●●
PRICE: $493
COMPANY: Epson
URL: www.epson.com

The Epson Perfection V700 Photo is an excellent and very speedy midrange scanner with two lenses for people who need to scan reflective media and transparencies, especially at high resolutions (macworld.com/1519).

Top Products are those we've recently reviewed in a comparison of like products. As new products become available, we'll update this list. For longer reviews of these products and for other product recommendations, go to macworld.com/reviews. All prices are the best current prices taken from a PriceGrabber survey of retailers as of June 10, 2008.

DIGITAL CAMERAS

DIGITAL SLR

D40

RATING: ●●●● **PRICE:** $449 **COMPANY:** Nikon **URL:** www.nikonusa.com

The Nikon D40 is a great value. This 6.1-megapixel camera comes with every feature you'd desire in a DSLR, such as adjustable ISO, Raw mode, and a variety of image-processing features (macworld.com/2498).

COMPACT DIGITAL CAMERA

NV11

RATING: ●●●●◐ **PRICE:** $235 **COMPANY:** Samsung **URL:** www.samsung.com

An excellent point-and-shoot digital camera, the 10.1-megapixel Samsung NV11 produces detailed and well-exposed images. Its versatile feature set accommodates beginners and advanced shutterbugs (macworld.com/2984).

MINIDV CAMCORDER

PV-GS320

RATING: ●●●● **PRICE:** $318 **COMPANY:** Panasonic **URL:** www.panasonic.com

Compared with other 3-CCD MiniDV camcorders, the Panasonic PV-GS320 is a bargain. And it's a good choice for people who want a camcorder that shoots high-quality video and still images for half the cost of a high definition device (macworld.com/2701).

LCD MONITORS

LARGE DISPLAY

LP2465

RATING: ●●●● **PRICE:** $617 **COMPANY:** Hewlett-Packard **URL:** www.hp.com

The HP LP2465 is an extremely adjustable 24-inch desktop LCD panel with a 16:10 wide-screen aspect ratio that immediately calls to mind the cinema. This affordable display's screen features a quick, 6ms gray-to-gray pixel response time, which makes it an excellent choice for viewing motion-heavy graphics in games and movies. (macworld.com/2508).

MEDIUM DISPLAY

MultiSync 2190UXi

RATING: ●●●●◐ **PRICE:** $977 **COMPANY:** NEC **URL:** www.necdisplay.com

The NEC MultiSync 2190UXi monitor is designed—and priced—for professional users. This 21-inch display doesn't come cheap, but it offers vivid, accurate colors; a wide viewing angle; and a convenient height-adjustable stand (macworld.com/1445).

FIREWIRE HARD DRIVES

DESKTOP DRIVE

My Book Studio Edition

RATING: ●●●●◐ **PRICE:** $240 **COMPANY:** Western Digital **URL:** www.westerndigital.com

The My Book Studio Edition's affordability, versatile connection options, compact design, and good performance add up to a superb 1TB drive (macworld.com/3295).

PORTABLE DRIVE

Rocbit 2B

RATING: ●●●●● **PRICE:** $182 **COMPANY:** Rocsecure **URL:** www.rocsecure.com

The portable Rocbit 2B is priced a bit higher than similar portable drives that lack encryption, but it's well worth its cost if security is a concern. In our tests, the Rocbit 2B was 6 to 31 percent faster than three comparable drives from other vendors (macworld.com/1443).

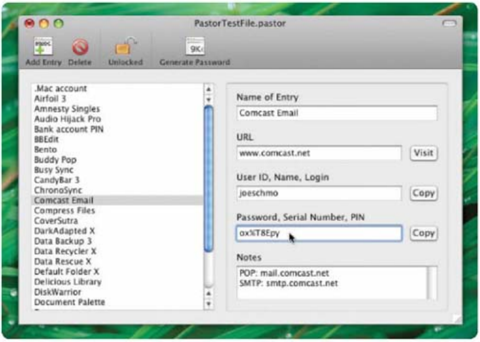
iPODS

PRODUCT	CAPACITY	RATING	PRICE[A]	DISPLAY	BATTERY LIFE	MEDIA SUPPORTED	FIND CODE[B]
iPod classic	80GB	●●●●	$230	2.5-inch color	30 hours of music playback; 5 hours of video playback	Music, photos, album art, video, games	3090
	160GB	●●●●	$320	2.5-inch color	40 hours of music playback; 7 hours of video playback	Music, photos, album art, video, games	3091
iPod touch	8GB	●●●◐	$284	3.5-inch color	22 hours of music playback; 5 hours of video playback	Music, photos, album art, video	3092
	16GB	●●●◐	$319	3.5-inch color	22 hours of music playback; 5 hours of video playback	Music, photos, album art, video	3093
	32GB	●●●●	$464	3.5-inch color	22 hours of music playback; 5 hours of video playback	Music, photos, album art, video	3365
iPod nano	4GB	●●●●◐	$149	2-inch color	24 hours of music playback; 5 hours of video playback	Music, photos, album art, video, games	3094
iPod nano	8GB	●●●●◐	$189	2-inch color	24 hours of music playback; 5 hours of video playback	Music, photos, album art, video, games	3095
iPod shuffle	1GB	●●●●	$49	none	12 hours of music playback	Music	2238
	2GB	●●●●	$69	none	12 hours of music playback	Music	3470

[A] From a PriceGrabber survey of retailers as of June 10, 2008. [B] Typing in find codes after macworld.com/ directs you to a product's review or overview. For example, macworld.com/3092 contains an overview of the 8GB iPod touch.

Mac Gems

Get more and expanded reviews at macworld.com/macgems **BY DAN FRAKES**



.Mac account
Airfoil 3
Amnesty Singles
Audio Hijack Pro
Bank account PIN
BBEdit
Bento
Buddy Pop
Busy Sync
CandyBar 3
ChronoSync
Comcast Email
Compress Files
CoverSutra
DarkAdapted X
Data Backup 3
Data Recycler X
Data Rescue X
Default Folder X
Delicious Library
DiskWarrior
Document Palette

Name of Entry: Comcast Email
URL: www.comcast.net
User ID, Name, Login: joeschmo
Password, Serial Number, PIN: ox%T8Epy
Notes: POP: mail.comcast.net
SMTP: smtp.comcast.net

Safer Than Post-it Notes Pastor is a free utility for securely storing your private information.

SECURITY

Pastor 1.8

RATING: **PRICE:** free (donations accepted) **COMPANY:** Markus Mehlau **URL:** www.mehlau.net/pastor

I've covered several for-fee ways to store personal data securely, but if you're looking for something simpler—an easy-to-use utility for storing passwords, software licenses, and similar information—Pastor 1.8 is a good alternative. It's essentially a database program designed to store this type of information in encrypted format. On the left side of Pastor's window is your list of records. On the right is the information for the current record: entry name; URL; user ID, name, or login; password, serial number, or PIN; and notes. Click on the Add Entry button to create a new record.

Pastor automatically sorts entries for easier browsing; and while it doesn't provide a search field, typing the first few letters of a record's name selects that record. Pastor lets you easily copy information from a record to the Clipboard, and you can visit a record's URL by clicking on the Visit button. Pastor has a useful bonus feature: a built-in password generator. Click on Generate Password (or press ⌘-G) and Pastor will generate a secure, random password based on the criteria you set.

Pastor lets you export your data to an unencrypted, tab-separated text file. (You should store this file in a safe place, such as an encrypted disk image or a physical disk that you keep in a secure location.) Unfortunately, there's no way to import data—for example, from a spreadsheet or text file. Pastor also needs more keyboard shortcuts and better keyboard navigation.

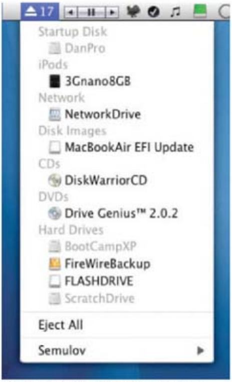
Although Mac OS X's Keychain Access utility (in /Applications/Utilities) offers similar functionality, Pastor's interface makes it easier to browse, view, and copy serial and registration numbers, and its password generator is more flexible than that of Keychain Access.

UTILITY

Semulov 1.3

RATING: **PRICE:** free **COMPANY:** Kevin Wojniak **URL:** www.kainjow.com

I have quite a few internal and external storage devices connected to my Mac, and to test *Mac Gems* programs, I download and mount many disk images each day. Since I prefer not to clutter my desktop with all these volumes, they're visible only in Finder-window sidebars. But I choose to hide many of them in the sidebar as well. This approach is great for keeping my



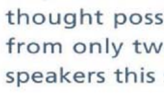
Eject Button Semulov provides a convenient menu for viewing and ejecting mounted volumes.

Introducing the NEW Bose® Computer MusicMonitor™

Performance you may never have thought possible from only two speakers this small.

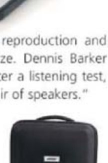
The Bose Computer MusicMonitor™ was developed for the growing number of people who use their computers for personal entertainment, and want accurate sound reproduction from a small and elegant system. According to Rich Warren of the *News-Gazette*, "If you want a pair of exceptionally small speakers with incredibly big sound for any purpose, listen no further."

Our best two-piece computer sound system. Until now, the rich low tones necessary for high-quality desktop sound have come only from large speakers or three-piece systems with a bass module. The MusicMonitor™ establishes for us a new threshold in the accuracy of music reproduction. As Arlen Schweiger of *Electronic House* reports, "The folks at Bose really know how to shrink a product while maintaining a big sound." It is the first time we have been able to produce sound quality like this with only two such small enclosures containing all the electronics and speakers.



Proprietary Bose technologies. The unexpected sound quality is made possible through a combination of unique Bose technologies, including our dual internal opposing passive radiators. This invention allows the system to deliver faithful low note reproduction and musical accuracy, despite its small size. Dennis Barker says in *Digital TV DesignLine* that "after a listening test, I was quite impressed with this tiny pair of speakers."

Enjoy all your digital entertainment with the richness it deserves. The contemporary metal design and small size make the MusicMonitor™ system a welcome addition to your desk or workspace. Digital music and video files sound more lifelike. And setup is simple. It should take you about as long to connect this system as it takes to remove it from the box.



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Aug. 31, 2008.

Listen risk free for 30 days. The best way to judge the performance of any sound system is in the unique acoustics of the environment where you'll use it. That's why we invite you to try the MusicMonitor™ risk free for 30 days. Order now and you'll even receive a free Carrying Case – a $59 value. Ask about using your own major credit card to make **12 easy payments,** with no interest charges from Bose.* Then listen, and discover why Bose is the most respected name in sound.

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on-screen workspace neat, but makes ejecting drives and images a bit of a hassle.

I found a simple solution in Semulov 1.3, which provides a menu-bar menu that displays all currently mounted volumes: hard drives, flash drives, CDs, DVDs, network volumes, iPods, and disk images—anything that can be mounted and ejected in the Finder. (Semulov conveniently groups items by type.) Choose a volume from the menu to immediately eject it, or choose the Eject All command to quickly eject all mounted volumes. (Semulov's Preferences menu offers a useful option to exclude internal drives, and, of course, Semulov never tries to unmount the startup disk.)

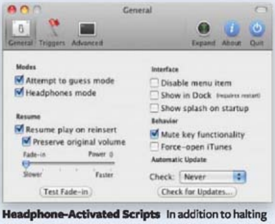
Semulov can also display, next to its menu-bar icon, the number of currently mounted volumes; and you can choose to prevent the startup disk and internal hard drives from appearing in the menu. Unfortunately, Semulov doesn't include any documentation, leaving you to guess what some options do. And if you

Breakaway 1.6

You're jamming away to iTunes on your MacBook—at work, at a coffee shop, in the library, or on a plane—but you're using headphones. The headphone cable gets yanked out, and suddenly your laptop is blaring your audio to everyone.

Saving you from such embarrassment is the goal of AllocInit's Breakaway 1.6 (★★★½; donation requested; macworld.com/3639). This handy utility automatically pauses iTunes whenever your headphones are unplugged from your laptop's headphone jack. (Breakaway works only with the MacBook and MacBook Pro, not older Apple laptops.)

Breakaway also includes a convenient feature that resumes iTunes playback when you plug in your headphones again, and it can map your laptop's mute key to act as a play/pause button for iTunes. In addition, Breakaway can trigger AppleScripts whenever you plug in or unplug your headphones, and whenever you mute or unmute the audio.



Modes
☑ Attempt to guess mode
☑ Headphones mode

Resume
☑ Resume play on reinsert
☑ Preserve original volume
Fade-in Power 0
Slower Faster

Interface
☐ Disable menu item
☐ Show in Dock (requires restart)
☐ Show splash on startup

Behavior
☑ Mute key functionality
☐ Force-open iTunes

Automatic Update
Check: Never

Headphone-Activated Scripts In addition to halting playback when your headphones get disconnected, Breakaway can run scripts based on your headphone or audio status.

Give your iPhone double the juice.

The first compact battery backup with a full 1200 mAh of power.

By Richard Thalheimer

My iPhone is my favorite product, though I use it so much, it gets low on battery power by dinner. This led me to develop the rechargeable Smart Backup Battery specifically for iPhone and iPod. Just snap it on (no cable), and it begins to charge the iPhone battery. This powerful 1200 mAh has 20% more capacity than its closest competitor. You can charge the iPhone while using it, and you can charge the battery and iPhone together–like getting an extra charger for free!

There's nothing quite like it. Other chargers use disposable AA's, or cheap plastic cases, or gray-market connectors, and may even damage your iPhone. Ours has a tough aluminum case, and is certified for iPhone. Lithium-ion takes hundreds of charges and doesn't develop memory.

The longest working compact battery available for iPhone.

Three LED lights indicate charge status. Works with all iPhone and iPod models except shuffle.

Made for iPod
Works with iPhone

Reviewers give it top marks.

Snaps right in. Without cables. Without hassle. Fits most cases.

"So does the RichardSolo (made by Sharper Image founder Richard Thalheimer) make for an easy-to-use, no-nonsense backup battery? ...YES!!! This thing is great. It's that good."–CrunchGear

"Do you often find yourself in the middle of day with your iPhone battery in the red? If so, I might have the perfect product for you...I found out how amazing this product really was."–iPhone24x7

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Hours of use may vary, depends on many factors, including type of use and connection speed.
iPod is a trademark of Apple Inc., registered in the USA and other countries. iPhone is a trademark of Apple, Inc.

rename a volume in the Finder, Semulov's menu won't reflect that change until you relaunch the program or eject and remount the renamed volume.

UTILITY

ProShutdown 1.1

RATING: **PRICE:** free **COMPANY:** KennettNet Software **URL:** macworld.com/3668

Pressing control-eject brings up Mac OS X's "Are you sure you want to shut down your computer now?" dialog box. On older Mac desktop keyboards, the control key was located in the lower left corner, and the eject key in the upper right, so you'd just press the two keys at the extreme corners. But on Apple's new aluminum keyboard, the key in the upper right corner is F19, not the eject button (which is now located just above the delete key).

ProShutdown 1.1 is a simple utility that activates the "shut down" dialog box when you press control-F19. That's all it does. If you prefer to use an intuitive keboard shortcut to shut down your Mac, you'll find ProShutdown quite useful.

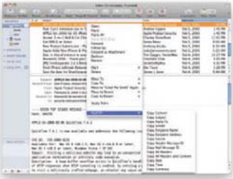
E-MAIL

MailCM 1.0.4

RATING: **PRICE:** payment requested **COMPANY:** Limit Point Software **URL:** macworld.com/3669

MailCM 1.0.4 is a contextual-menu plug-in for Apple's Mail that lets you quickly copy any of various message attributes. You just control-click (or right-click) on a message—either in a list or anywhere in the message itself—and then choose the information you want to copy; an audible beep confirms the action. For example, if you want to copy an e-mail's content, simply control-click on the message, and select Copy Content from the contextual menu.

The information you can grab includes the header, body, sender, reply-to field, and more. If you select multiple messages in a message list and then use MailCM, it will copy to the Clipboard the selected information category from all of those messages, formatted as a list. ☒



E-mail Info MailCM lets you quickly copy many types of data from Apple Mail messages.

Senior Editor **Dan Frakes** is always looking for great, low-cost products. Send your thoughts on this column, or on things you'd like to see in future columns, to macgems@macworld.com.

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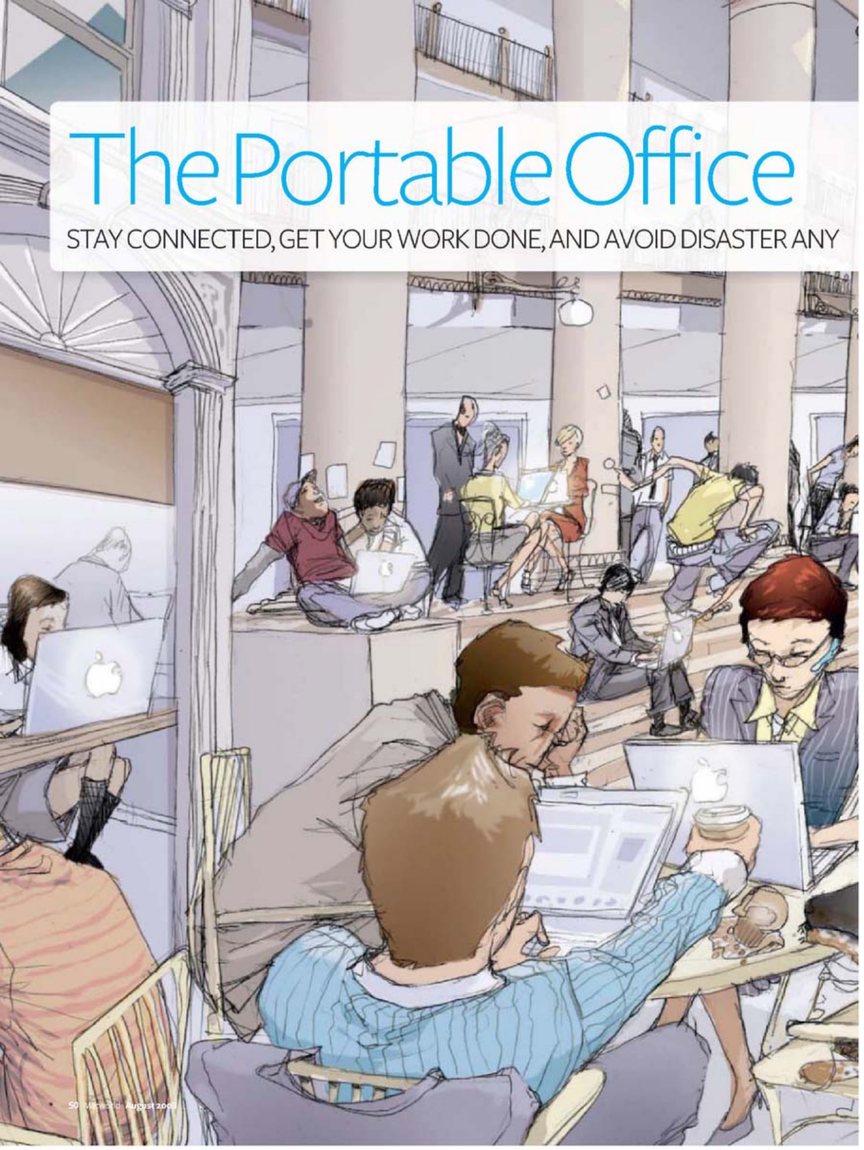


WHERE YOU GO

These days, many of us are spending less time at the office.

It's not that we're working less; in fact, it's just the opposite. Thanks to laptops, e-mail, and ubiquitous Internet access, we can stay on the job 24-7 no matter where we happen to be.

To help you cope with that new reality, we offer the following tips and tricks for the mobile work style. We asked Glenn Fleishman to compare the latest cellular data services, which can deliver broadband-like speeds to your laptop wirelessly almost anywhere you can use a cell phone.

We asked Gina Trapani, editor of the Lifehacker productivity blog (www.lifehacker.com), to explain how she and her coworkers—who are scattered all over the United States in what Gina calls the "placeless office"—use Web-based services to communicate and collaborate.

Finally, we asked you, the *Macworld* reader, to tell us about the worst things that ever happened to you and your Mac on the road, and what you learned as a result. Some of your answers were horrifying; all, we hope, are instructive.

ILLUSTRATIONS BY MATTHEW VINCENT

The Best Way to Get Online

Connect almost anywhere—fast, wirelessly, and without hotspots

BY GLENN FLEISHMAN

For many of us who travel and want to get online from the road, Wi-Fi hotspots alone just don't cut it. There aren't enough of them, they aren't always available where you want them, and they can be a security nightmare. There is a better alternative: cellular *data* service from the same wireless carriers who connect our cell phones.

The advantage of cellular data service is its ubiquity. Like cellular voice service, it's based on networks of base stations that are located in most cities and airports and along most major highways in the United States. That means you can get online at near-broadband speeds in most metropolitan areas, and at slow but still usable rates in less-traveled and less-populated places.

Until recently, the biggest problem with cellular data service was that few of the carriers offered good Mac support; Verizon was long the main exception. But that has gradually been changing: all the major carriers now make it much easier for Macs to get online, too.

This means that for most mobile Mac users, a cellular data plan is now the best—if not the least expensive—way to get online from the road. But which carrier's service should you choose? Here's how they compare.

The Carriers

AT&T, Sprint, and Verizon each offer speedy, third-generation cellular data networks in the United States (see "Cell Data Glossary"). Sprint and Verizon claim downstream rates from 600 Kbps to 1.4 Mbps; AT&T, from 700 Kbps to 1.7 Mbps; all three can reach peak speeds of more than 2 Mbps. Going the other way, Verizon and Sprint claim upstream rates of 500 to 800 Kbps; AT&T, from 500 Kbps to 1.2 Mbps. To compare these rates with those of other Internet service plans, see "3G: Bandwidth and Cost").

Those claims aren't too far wrong. In informal testing, our colleagues at *Computerworld* found that downloads averaged around 500 to 750 Kbps, peaking around 1.2 to 1.6 Mbps, while uploads were about 230 to 480 Kbps (see "Cell Data: Real Speeds"). In my own informal testing with a new Sprint adapter card, I actually hit a peak of 2.4 Mbps for one download.

3G: Bandwidth and Cost

	Upstream[A]	Downstream[A]	Approximate Cost per Month
3G	500 Kbps–1.2 Mbps	600 Kbps–1.7 Mbps[B]	$60[C]
EDGE (2.5G)	50 Kbps	100–200 Kbps	$20
Clearwire	256 Kbps	2 Mbps	$45
Low-End DSL	384 Kbps	768 Kbps	$20[D]
Premium DSL	768 Kbps	6 Mbps	$35[D]
Standard Cable	384 Kbps	6 Mbps	$43[E]
Premium Cable	5 Mbps	30 Mbps	$66[F]
Standard Fiber	1 Mbps	20 Mbps	$120[G]

[A] Speeds as claimed by carriers. [B] With peak rates of 2 Mbps or higher for sustained downloads. [C] May require one- to two-year commitment with fee for cancellation. [D] AT&T. [E] Comcast. [F] Cablevision. [G] Qwest.

All three services provide roughly comparable coverage. Of the three, AT&T is lagging furthest behind: It has full service in 275 of the 350 top metropolitan markets, and plans to finish rolling out service in the remaining 75 this year. When you roam beyond the reach of the 3G network, service drops back to whatever last-generation cellular data network that carrier used; as a result, your speed will drop more precipitously on Verizon's and Sprint's networks than on AT&T's.

T-Mobile is lagging behind the other big national carriers: While the company just launched a 3G network in New York City, it has only an intermediate 2.5G network—EDGE—in the United States. (EDGE is the middle-speed network used by the first-generation iPhone.) T-Mobile is also alone among the Big Four in not offering cell-data options for Mac owners; it offers just a single PC Card, with no Mac drivers or software.

The Plans

The cost of 3G service depends on your carrier's plans and how much bandwidth you want (see "Cellular Service Options").

AT&T offers one service plan: it's $60 per month and you're allowed a maximum of 5GB of combined upstream and downstream data. AT&T says that it may apply a surcharge for users who go over the limit, but it doesn't say exactly how much that charge might be or whether there's an upper limit on those surcharges. Customers can cancel instead of paying the overage charges—but that's an ugly option because of the cancellation fees.

Sprint also has a $60-per-month plan and recently started capping its

Cell Data: Real Speeds

	Peak Download Speed[A]	Average Download Speed[B]	Average Upload Speed[B]
AT&T LaptopConnect	1.6	755	484
Sprint Mobile Broadband	1.2	494	294
Verizon BroadBandAccess	1.3	592	232

[A]In Mbps; higher is better. [B]In Kbps; higher is better.

bandwidth at 5GB for on-network service and 300MB for roaming service. The company says it will contact customers who exceed either threshold in two months out of any three-month period to discuss options; customers who choose to cancel or who don't respond to inquiries will have their cancellation fee waived.

Sprint also has a limited data plan for $40 per month that allows you 40MB per month of combined upstream and downstream data. If you go beyond that limit, you'll be charged about $1 per megabyte, with a maximum total charge of $100 per month.

Verizon too offers a $60 plan that's capped at 5GB per month. The state of New York investigated Verizon over its calling this service "unlimited"; the carrier recently had the investigation dropped in return for clarifying its rules and providing a clearer disclosure (the best you'll get from any of the three carriers) about how it measures service and how it defines appropriate use of its network.

If you sign up for Verizon's 5GB plan, you'll be charged 49 cents for each additional megabyte beyond that 5GB cap. But before those charges start, you'll be notified via e-mail, text message, and the connection software when you are approaching the limit. (If you already have an older cellular data service contract, your bandwidth may be throttled down to 200 Kbps if you go over your 5GB limit.)

Verizon also offers a limited data plan for about $40 per month. That includes 50MB per month of combined upstream

Cell Data Glossary

Cell data networks are classified by generation; not surprisingly, each generation has been faster than the last. Here's what the acronyms mean.

1G Analog. Extremely slow, nearly discontinued.

2G Digital voice service with data grafted on. Plain GSM, the dominant worldwide standard, can be used for 9,600-bps connections; GPRS can reach as fast as about 50 Kbps. 1xRTT, used by Verizon Wireless and Sprint but few other major carriers outside South Korea and Japan, is about as fast as a dial-up modem.

2.5G EDGE (which works on existing GSM networks) offers rates as fast as 200 to 400 Kbps. It's what the first-generation iPhone used. A next-generation EDGE technology that would cost carriers little to deploy could boost speeds beyond 1 Mbps, but it would require new chips in handsets and smart phones.

3G The holy grail of cell data—for now. 3G networks run at broadband rates. The original 3G standards deployed were UMTS (for GSM networks) and EVDO Rev. 0 (for CDMA). AT&T offers service using the newer HSPA standard; Sprint and Verizon use EVDO Rev. A.

4G Several standards are competing to see what will replace 3G. Sprint and Clearwire (a company founded by cellular legend Craig McCaw) recently agreed to a joint venture that plans to offer WiMax service—which can reach speeds of up to 15 Mbps—nationwide by 2010. AllTel (the country's number five carrier), AT&T, T-Mobile, and Verizon have all committed to a GSM standard called LTE, but it won't be commercially deployed until at least 2010.

Tales of the TSA

Going through airport security, I put my laptop bag in the plastic TSA bin and placed my MacBook on top of it. But before I could get the bin on the conveyor belt, my MacBook slipped off the bag , over the lip of the bin, and onto the floor.

Lesson Learned Put your laptop *under* your laptop bag in the bin, not on top of it.

LINDA VANDENBERG

I once left my PowerBook on the table at the end of the security conveyor belt at the airport. Amazingly, it was still there 45 minutes later.

Lesson Learned I now always put my MacBook Pro through the security conveyor first. That way, when I get to the other side, it's the first thing I see.

TRIPP FROHLICHSTEIN

In 2002, when I was traveling from Toronto to San Diego, the security staff wanted me to turn on my PowerBook to make sure it was legit. One problem: The battery was dead, and the power cord was in my checked baggage. The security supervisor said I would have to check my carry-on, and when I got to San Diego, my Mac was no longer in the carry-on.

Lesson Learned I always pack my computer and the power cord in the same bag and never let it out of my sight.

WILLIAM HILL

Cellular Service Options

Carrier	Monthly	Overage Charges	Limit on Monthly Bandwidth	Notes
AT&T	$60	Not explained until you hit the limit	5GB	
Sprint	$40	$1/MB	40MB	Maximum charge: $100/month
Sprint	$60	none	5GB	Warnings if you exceed limit regularly.
Verizon Wireless	$40	$0.99/MB	50MB	
Verizon Wireless	$60	$0.49/MB	5GB	Extensive warnings before you reach the limit

and downstream data. If you go over that limit, you'll be charged 99 cents per megabyte.

Most of these plans require a one- or two-year commitment. If you don't want to commit, AT&T and Verizon will charge you $80 or more per month for service, plus the full price of the adapter. Sprint recently dropped that month-to-month option, and the other two could follow suit.

My advice: The $60-per-month plan from any carrier is almost certainly the best. Five gigabytes per month translates to under 200MB a day on average, which isn't an onerous limit. If you're not buying movies from the iTunes Store, using peer-to-peer networks, or constantly installing huge software updates, you might never even exceed this daily average. But be careful: At 800 Kbps (Verizon's reported average downstream speed), you could hit 200MB within 30 minutes of daily continuous downloading.

To save money, you might want to opt for a cheaper Wi-Fi account (see "The Hotspot Alternative"). Note that these carriers used to tie voice and cell data plans together; if you already had a cellular voice carrier, chances are that's where you'd get your best deal for data. That's not the case anymore. So don't restrict your search to the carrier you already use.

The Hardware

All three carriers offer USB, ExpressCard, and PC Card hardware options, all with Mac OS X support. Comparable hardware options cost roughly the same, regardless of the carrier (see "Cell Data Hardware"). Though the hardware offerings change constantly, AT&T currently offers three cards, Sprint six, and Verizon eight. The main differences between them are card format, battery consumption, and size, but not performance. Typically, the least expensive USB adapter burns more power and is bulkier than its more expensive counterparts. Speed is a function of the network, not the card.

Your choice of cards will depend largely on the Mac laptop model you have. Most PowerBooks have PC Card slots; so far, only the MacBook Pro has an ExpressCard slot. Every current Mac laptop—including the MacBook and the MacBook Air—has a USB slot, and each carrier offers one or more USB adapters.

Some USB modems may require a cable or an extender to plug in alongside other USB adapters; newer and more-expensive USB adapters tend to be smaller and sleeker than older units. Because it's so thin, the MacBook Air almost certainly needs a USB cable extender—which may come with the modem—to make a good connection.

The cost of the hardware will vary by carrier and whatever deals it's offering when you sign up for service. Signing a two-year service contract gets you the best deal. Most carriers also offer discounts if you buy online, and some offer instant online or mail-in rebates.

The Hotspot Alternative

Just because cellular data service is becoming increasing viable, that doesn't mean you should forget entirely about Wi-Fi. It can be a great complement to cell data service, because it's often available in those places where cellular signals are poorest: inside. (Coincidentally, that's also where you'll find lots of seats to work in and outlets to plug into.) Wi-Fi can also offer greater bandwidth: connections of 3 to 8 Mbps downstream aren't unusual. You can buy roaming Wi-Fi plans by the day or month; here's a quick summary of some typical plans.

Wi-Fi Hotspot Plans

Plan	Contact	Monthly Cost	Number of Hotspots in the United States	Number of Hotspots outside the United States
AT&T Wi-Fi Basic	www.att.com	free[A]	16,000[B]	none
AT&T Wi-Fi Premier	www.att.com	$20[C]	17,000	54,000
Boingo Global	boingo.com	$39	18,000	62,000
Boingo Unlimited	boingo.com	$22	18,000	none
iPass Global Wi-Fi	www.ipassconnect.com	$45[D]	24,000	76,000
iPass North America Wi-Fi	www.ipassconnect.com	$30	24,000	none

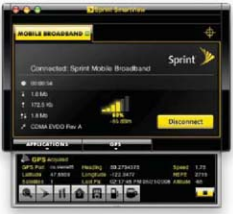
[A] For qualified AT&T customers. [B] Includes Starbucks, McDonald's, Barnes & Noble; excludes hotels and most airports. [C] Available as $10-per-month upgrade for AT&T customers. [D] Includes dial-up and hotel Ethernet, too.

In addition to those brass-tacks concerns, you should also consider these other points when you buy 3G hardware: Both of Sprint's USB modems and Verizon's most expensive USB modem (the USB727) include micro-SD slots; that means they can double as USB flash drives. If your laptop has just one USB port or the ports' positioning makes it hard to insert a USB drive, this feature might make it worthwhile to choose Sprint or spend a little extra with Verizon.

All but one of Sprint's modems (the AirCard 595 PC Card) include GPS technology. If you're using one of those modems, the SprintView software will show your current GPS coordinates and can connect you to Web lists of nearby amenities.

Some USB modems—such as the Verizon 595U—have internal batteries and can be charged separately from the laptop; this can extend your laptop's battery life by more than an hour.

All of Verizon's and all but one of Sprint's modems sport external antenna jacks that allow you to attach higher-gain (in other words, farther-reaching) external antennas. That can be handy if you frequent remote areas or use the adapter in your car (the frame can block reception). You can buy external antennas from the carriers or through third parties. If you go with a third party, just make sure the antenna you buy is designed to work with your carrier's 3G frequency ranges.



Sprint SmartView Sprint's SmartView software helps you initiate your wireless connections and monitor them once they're started.

Cell Data Hardware

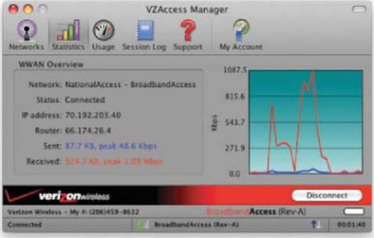
Carrier	Item	Price[A]	Cell Data Standards	Interface	OS X Compatibility
AT&T	AT&T USBConnect 881	$0	3G, EDGE, quad band	USB	10.4 and up
	Option GT Ultra Express	$50	7.2 HSPA, EDGE, quadband	ExpressCard	10.4 and up
	Sierra Wireless AirCard 881	$50	3.6 HSPA, EDGE, quadband	PC Card, Type II	10.4 and up
Sprint	Sierra Wireless Compass 597	$50	EVDO Rev. A	USB[B,C]	10.4 and up
	Novatel Wireless Merlin EX720	$100	EVDO Rev. A	ExpressCard[C]	10.4 and up
	Novatel Wireless Ovation U727	$100	EVDO Rev. A	USB[B,C]	10.4 and up
	Novatel Wireless Merlin S720	$120	EVDO Rev. A	PC Card, Type II[C]	10.4 and up
	Sierra Wireless AirCard 595	$120	EVDO Rev. A	PC Card, Type II	10.4 and up
	Sierra Wireless AirCard 597E ExpressCard	$130	EVDO Rev. A	ExpressCard[C]	10.4 and up
T-Mobile	Sony Ericsson GC89	$150	EDGE/Wi-Fi	PC Card, Type II	none
Verizon	VW UM150 USB Modem	$0	EVDO Rev. A	USB	10.3.9 and up
	VW KPC680 ExpressCard	$50	EVDO Rev. A	ExpressCard	10.4.8 and up
	VW PC5750 PC Card	$50	EVDO Rev. A	PC Card, Type II	10.3.9 and up
	VW USB720 Modem	$50	EVDO Rev. A	USB	10.3.9 and up
	VW AirCard 595	$100	EVDO Rev. A	PC Card, Type II	10.3.9 and up
	VW AirCard 595U USB Modem	$130	EVDO Rev. A	USB	10.3.9 and up
	VW V740 ExpressCard	$130	EVDO Rev. A	ExpressCard	10.4.8 and up
	VW USB727 Modem	$150	EVDO Rev. A	USB[B]	10.3.9 and up

[A] With a two-year service contract. All prices are online only; in-store prices tend to be $50 to $100 higher. Mail-in and online rebates are included in the price. [B] Includes micro-SD slot. [C] Includes GPS chip.

Overall, I recommend USB modems for most users. They work with pretty much any Mac, and they're easily exchanged between systems: if you buy an ExpressCard for your MacBook Pro but then need to borrow someone's MacBook or MacBook Air, or if your home broadband goes on the fritz and you want to plug your 3G modem into your desktop, you'll be out of luck. A USB modem can connect pretty much any Mac (or PC, for that matter). The only downside? USB modems stick out, so you can easily damage them if you don't take care.

The Software

In addition to a 3G service plan and the hardware, you'll also need some software to help OS X work with your



VZAccess Manager

WWAN Overview

Network: NationalAccess – BroadbandAccess

Status: Connected

IP address: 70.192.203.40

Router: 66.174.26.4

Sent: 87.7 KB, peak 48.6 Kbps

Received: 524.7 KB, peak 1.09 Mbps

Verizon Wireless – My #: (206)459-8632

Connected

Verizon VZAccess Manager Verizon's VZAccess Manager can handle both 3G and Wi-Fi connections.

cell data adapter. This software recognizes when you insert or connect the adapter, lets you connect to the network, and shows you the signal strength and the current rates of upstream and downstream bandwidth.

Verizon offers VZAccess Manager (www.vzam.net). It works with all Verizon cell data cards. Sprint's Mac-compatible Sprint SmartView works with all current and most older mobile broadband hardware. AT&T still relies on customized versions of the software designed by its hardware manufacturers.

Unless you purchase a modem from a cellular reseller who agrees to activate the service for you, you'll use the carrier's software to register the modem on the network and make it ready for use. VZAccess Manager can also manage Wi-Fi connections for you; Sprint's software can't.

Leopard itself includes minimal support for several cell data modems (see macworld.com/3627). OS X will recognize the adapter when you insert or connect it, and will then give you a menu-bar menu you can use to connect to or disconnect from the network, eject the card, and see how long you've been online. But OS X's software can't help you activate the adapter or take advantage of extra features, such as the GPS built into some Sprint hardware.

In addition to the vendors' software and OS X, there are a couple of third-party software options. Smith Micro Software (which makes VZAccess Manager for Verizon) offers the $30 QuickLink Mobile (macworld.com/3628). QuickLink supports the cell data modems sold by nearly every major (and minor) U.S. carrier, as well as dozens of handsets that can be used as cell data modems. Nova media offers the $75 launch2net (macworld.com/3629), which works with hundreds of phones, cards, and USB adapters worldwide.

My advice: The software from the carriers works perfectly fine. I'd only use OS X's built-in tools if for some reason you can't use the vendor's. And unless you need a particular extra feature in Smith Micro's or nova media's software—such as launch2net's support for multiple profiles based on GSM authentication modules—there's no reason to spend any more money.

The Final Word

No matter which carrier you choose, 3G cellular data service will be a huge step up from relying on Wi-Fi hotspots to get online from the road. You may, in fact, decide that it's the only online access you need and cut the cable or DSL cords at home or at work. The coverage, the pricing, and—most of all—the Mac compatibility are all good enough that 3G service could be the only broadband you need.

Glenn Fleishman is the editor of Wi-Fi Networking News (wifinetnews.com) and the author of *Take Control of Your 802.11n AirPort Extreme Network* (Take Control Books, 2008).

Terror at 30,000 Feet

On a flight to Athens, an older woman (who'd clearly been taking full advantage of the beverage service) became fascinated by my MacBook and sat beside me to get a closer look. The attendant promised her something from the drinks trolley if she'd go back to her seat. The woman asked for water, and the flight attendant went to get it. When the flight attendant returned, the woman lunged for the bottle. It shot out of her hand and hit my poor MacBook Pro, leaving a big dent.

Lesson Learned When you use a Mac in public, be prepared for unwanted interruptions (or worse).

SIMON KAHN

I was on a red-eye flight to the East Coast when nature called. I placed my laptop in the seat pocket before getting up to use the restroom. When I returned to my seat, my computer was missing. Surveying the area, I found a preteen boy nearby using it. When I confronted him, his parent said that the boy was bored and that I should share my computer. I rang for the flight attendant, only to find out that she was the one who had given the kid my laptop. They finally relented and I retrieved my machine.

Lesson Learned Password-protect your laptop so strangers can't use it even if they get their hands on it.

JOHN VANNIEROP

Work Anywhere

With Web applications, you can collaborate no matter where you are

BY GINA TRAPANI

For the past three years, I've worked side-by-side with my three coeditors at Lifehacker.com—but we've never been in the same place at the same time. The members of our distributed team work hundreds (sometimes thousands) of miles from each other, spanning multiple time zones and disparate work hours. Yet we work together every day.

The key to our placeless office: Web applications that let us chat, collaborate, and do all the other things that regular, in-the-same-place work teams do, and that let us do it from our home offices, hotel rooms, and Internet cafés.

Even if you go to an office every day, where the conference rooms have actual walls, at some point you might work from a placeless office, too. Maybe you telecommute one day a week, or head out on the road for a couple of weeks of business travel, or collaborate with an overseas consultant for a month. Here are a few tools—the ones we use every day—to help you set up shop.

Chat: Campfire

Campfire (campfirenow.com) is a dead-simple group-chat Web application, like a cross between an instant messenger and a bulletin board. It doesn't require invitations, and there's no need to figure out who uses Apple's iChat and who uses Adium.

Campfire creates a private "room" where you and your coworkers can breeze in and out anytime to ask questions, post updates, or just keep up with water-cooler topics. We used to schedule weekly meetings in Campfire, but lately we've found it works better as an always-open virtual space. My coworkers and I hang around there most of the day while we work. Keeping things unstructured and unscheduled leaves room for us to chat about anything—from what we did over the weekend, to specific issues that crop up while we work. Since our East Coast writer starts earlier than everyone else, we West Coasters catch his posts in Campfire after we wake up and log on. More than any other Web application on this list, Campfire offers a strong sense of working in the same space with your team, even if you're physically spread out across the country.

E-mail: Gmail

Because we can't just drop by each other's cubicles to talk, we rely on e-mail to stay in touch. And because we generate such a massive quantity of e-mail, we use Gmail (●●●●; macworld.com/3524) to keep it under control.

For example, we get dozens of messages from readers every day. If one of us responds to a reader's message, he or she copies everyone else on the

By the Numbers: Power on Planes

Sure, more planes have electrical outlets on board these days, so you don't have to worry about running out of battery power somewhere over Nebraska. But do you have the right power *adapter?* Some planes use plain old AC (so your standard adapter should work). But others use DC outlets, either 20mm or EmPower; Apple's MagSafe Airline Adapter will handle both kinds. To find out what adapter you'll need, find out the kind of plane you'll be flying on and then check SeatGuru (www.seatguru.com) for the plane's layout and the types of outlets it supports.—MARYANN JONES THOMPSON

Outlets per seat on planes flown by major U.S. airline carriers

Airline	737	757	767	777	Airbus A3XX
AirTran Airways	N/A	N/A	N/A	N/A	N/A
American Airlines	0.41 (DCP)	0.33 (DCP)	0.49 (DCP)[A]	0.39 (DCP)	0.17 (DCP)
Continental Air Lines	0.00	0.35 (ACP)[B]	0.30 (EMP)[C]	N/A	N/A
Delta Air Lines	0.43 (EMP)	N/A	1.00[D] (ACP)	0.69 (ACP and EMP)	N/A
JetBlue Airways	N/A	N/A	N/A	N/A	0.00
Northwest Airlines	N/A	0.00	N/A	N/A	0.00[E]
Skywest Airlines[F]	N/A	N/A	N/A	N/A	N/A
Southwest Airlines	0.00	N/A	N/A	N/A	N/A
United Airlines	0.00	0.00[G]	0.14 (EMP)[H]	0.10 (EMP)[H]	0.09 (EMP)[H, I]
US Airways	0.00	0.00	N/A	N/A	0.71 (EMP)[J]

Top ten U.S. airline carriers, by passenger volume. Sources: www.faa.gov and www.seatguru.com. N/A – not applicable. ACP – AC power. DCP – DC power. EMP – EmPower. [A] 767-200; 767-300 has 0.32 outlets per seat (DCP). [B] 757-200; 757-300 has no outlets. [C] 767-200; 767-400 has 0.39 outlets per seat (EMP). [D] Not all 767-300s have outlets. [E] Airbus A319; Airbus A320 has no outlets. [F] Operates smaller planes; none have power ports. [G] Standard 757-200; premium 757-200 has 0.78 outlets per seat (ACP). [H] Outlets in first class only. [I] Airbus A320; Airbus A319 has no outlets. [J] Airbus A319; A320 has 0.69 outlets per seat (EMP); A321 has 0.62 outlets per seat (EMP).

response. Gmail's threaded view makes it clear who said what. Because our e-mail address is published on the Web site, we also need a full-strength spam filter. Gmail supplies a good one that yields only occasional false positives.

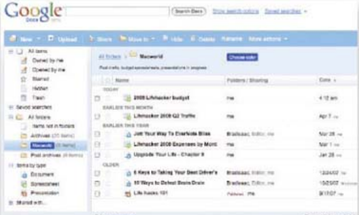
Because Gmail supports IMAP, you can check your mail in Apple's Mail (or any other IMAP-compliant client) or on your iPhone, as well as in your browser. It offers custom domain addresses (such as gina@lifehacker.com) for free, so you get your own address without having to maintain a mail server.

Group Calendar: Google Calendar

Because we aren't on a single network, we can't use regular shared-calendar tools. So we rely on Google Calendar (★★★★; macworld.com/3643) for group scheduling.

We share a team calendar to keep up with travel and vacation days, upcoming events, and any other scheduled happenings. We create multiple, separate calendars (such as "Marketing schedule" and "Code deployment"), and then set custom sharing preferences so only certain coworkers can view and edit them. Google Calendar can also send event reminders via e-mail, text message, or instant messenger.

Google Docs Using Google's online applications, you can collaborate on word processing documents, spreadsheets, and presentations.



Collaboration: Google Docs

If you share and collaborate on word processing documents, spreadsheets, or presentations, Google Docs (docs.google.com) could be the perfect office suite for you.

At Lifehacker.com, guest editors submit article drafts through Google Docs, which makes keeping on top of revisions easy. The boss and I share a Google spreadsheet to track and allocate the Web site's quarterly budget. I revise and share slides before presentations.

Like any good desktop suite, Google Docs lets you update existing documents or create new ones, share them with others for viewing or editing, and track revisions. Unlike desktop software, it lets you do all that with nothing more than your favorite browser. With an online office suite, you never have to worry about software licensing, shared network drives, or passing multiple revisions back and forth as e-mail attachments; your team members edit the document in a single place, and everyone's revisions are tracked for easy inspection and rollback.

Google Docs also integrates nicely with Gmail (so, for example, if you send a Microsoft Word attachment via e-mail, you can open it in Google Docs just by clicking on it once in Gmail).

Documentation: MediaWiki

Just as Wikipedia (www.wikipedia.org) enables thousands of strangers to collaboratively document the world's collective knowledge, MediaWiki (www.mediawiki.org)—the software that powers Wikipedia—can do the same for your workgroup and *its* collective knowledge.

The Lifehacker team wiki, located at a private URL, is where we maintain in-house writing style guides, lists of shared user names and passwords,

By the Numbers: Hotspots in Airports

A word of warning: Be wary if you fire up your MacBook during a layover, hoping to check your e-mail, and you see "Free Wi-Fi" in AirPort's menu of nearby networks. It may not be a legitimate network, but rather an artifact of some odd networking behavior by nearby Windows XP machines. Unless the airport explicitly advertises free Wi-Fi, use one of the trusted services instead. For more information, see Travelpost.com. —MARYANN JONES THOMPSON

Wireless service providers in U.S. airports

City	Airport	Internet Service Providers
Atlanta, Georgia	Hartsfield-Jackson Atlanta International Airport	Boingo[A], Concourse[B], Sprint PCS[C]
Chicago, Illinois	O'Hare International Airport	Boingo[A], Concourse[B]
Dallas/Fort Worth, Texas	Dallas/Fort Worth International Airport	Boingo[A], T-Mobile[D]
Denver, Colorado	Denver International Airport	free
Houston, Texas	George Bush Intercontinental Airport	Boingo[A], Sprint PCS[C]
Las Vegas, Nevada	McCarran International Airport	free
Los Angeles, California	Los Angeles International Airport	Boingo[A]
New York, New York	John F. Kennedy International Airport	Boingo[A], free[E]
Newark, New Jersey	Newark Liberty International Airport	Boingo[A], Concourse[B]
Phoenix, Arizona	Phoenix Sky Harbor International Airport	free

Top ten U.S. airports, by passenger volume (2007). Sources: Airports Council International, North America; TravelPost.com. [A] $8/day, $22/month; www.boingo.com. [B] $7–$8/day, www.concoursecommunications.com. [C] $10/day, $50/month; www.sprintpcs.com. [D] T-Mobile: $6/hour for the first hour (10 cents/minute thereafter), $10/day, $30–$40/month, hotspot.t-mobile.com. [E] JetBlue terminal only.

software license codes, story pitches and research, and production guidelines. Compared with Google Docs, it's better for documents that will stick around for a while than it is for short-term projects. We aren't actively editing wiki pages every day; sometimes a week or more passes without an edit. But whenever we decide on a new process, we document it in the wiki. That way we're all on the same page, knowledgewise. The wiki has been a priceless resource for veterans and new hires alike.

All the pages inside a wiki are linked, which makes browsing and searching easier. The wiki software makes it easy to see who made certain revisions, and lets you roll back and compare page changes. You can also keep up with wiki edits via an RSS feed.

MediaWiki isn't a hosted application; you have to download it and set it up on a server of your own. If messing with PHP and MySQL is not your cup of tea, try the BitNami installer (bitnami.org). If you're interested in a hosted wiki, check out PBwiki (pbwiki.com).

Project Manager: Backpack

We track all our in-house projects with Backpack (backpackit.com). Made by the same folks who built Campfire—and integrated with Campfire for project-related chats—Backpack offers a simple interface for scheduling and assigning project milestones, posting questions and updates on a message board, and assigning tasks to team members.

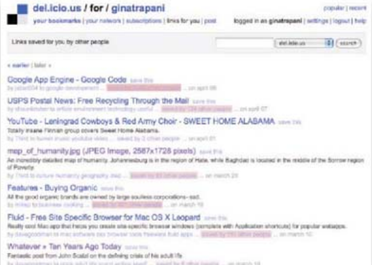
For example, we develop small-scale software utilities such as Firefox extensions and scripts. Backpack helps us keep track of what's in progress and how far along it is.

Bookmark Manager: Del.icio.us

Finding and sharing good Web links is what we do. So finding a way to share new links—without interrupting the entire team with an e-mail or IM every time we come across a good one—is crucial. Instead, we save it in the social bookmarking service del.icio.us. (Lifehacker's publishing company, Gawker Media, uses social bookmarking service Wists [www.wists.com] to do the same thing.)

Whenever one of us finds something that's relevant on the Web, we add it to del.icio.us with a unique in-house tag. The rest of us subscribe to that tag's RSS feed, so we can peruse the recommended links at our leisure from our newsreader. In essence, the bookmark tag acts as a low-overhead company blog. We also use the site's `for:` tag—any bookmark that I tag with `for:ginatrapani` will show up in my Links For You area. ☒

Gina Trapani is the lead editor of Lifehacker .com and the author of *Upgrade Your Life: The Lifehacker Guide to Working Smarter, Faster, Better* (Wiley, 2008).



del.icio.us / for / ginatrapani

popular | recent
your bookmarks | your network | subscriptions | links for you | post
logged in as ginatrapani | settings | logout | help
search
« earlier | later »
save this

Links saved for you by other people

Google App Engine - Google Code

USPS Postal News: Free Recycling Through the Mail

YouTube - Leningrad Cowboys & Red Army Choir - SWEET HOME ALABAMA
Totally insane Finnish group covers Sweet Home Alabama.

map_of_humanity.jpg (JPEG Image, 2587x1728 pixels)
An incredibly detailed map of humanity. Johannesburg is in the region of Hate, while Baghdad is located in the middle of the Sorrow region of Poverty.

Features - Buying Organic
All the good organic brands are owned by large soulless corporations--sad.

Fluid - Free Site Specific Browser for Mac OS X Leopard
Really cool Mac app that helps you create site-specific browser windows (complete with Application shortcuts) for popular webapps.

Whatever » Ten Years Ago Today
Fantastic post from John Scalzi on the defining crisis of his adult life

Del.icio.us Using del.icio.us, you can collaboratively share and tag bookmarks with anyone, and keep track of it all via RSS.

Accidents Will Happen

The scene: A brand-new 12-inch PowerBook and a latte without a lid were sitting together on a coffee-shop table. The table had three legs instead of the usual four, and a ten-month-old Schnoodle puppy was tied to one of those legs. The Schnoodle lunged for something and the latte spilled all over the PowerBook. **Lesson Learned** I now maintain a beverage-free zone of at least 12 inches around my Mac.

DAN BRYK

I normally carry my MacBook in my schoolbag wherever I go. But one day, I put my schoolbag on the passenger seat of my car and set my MacBook on top of it. About a mile down the road, I came around a corner to see another car coming at me in my lane. I quickly swerved and wound up going down into a sandy ditch, flipping my car over twice. After I crawled out and regained my senses, I found my MacBook had been thrown through the window and landed a good distance away. It was dirty and scratched up, but when I opened the lid and turned it on, it still worked perfectly. In fact, my fiancé is still using that MacBook, while I have a nice new MacBook Pro.

Lesson Learned When I'm driving with my Mac, I secure it safely, inside its bag, before I go anywhere.

ERIC MUSGROVE

Stay in Syn

How to keep data and files on multiple Macs

For people who use more than one Mac—perhaps a laptop and a desktop, or a Mac at home and another at work—keeping files, photos, music, and other data in sync between the computers can be a real challenge. When syncing two or more Macs, most of us have run into errors, conflicts, and confusion. But with a bit of background information and some practical advice, you can overcome most of the hassles of synchronizing data between Macs. (Although syncing comes in many forms, this article focuses on Mac-to-Mac synchronization, and assumes that you're using the same software on each computer—syncing between different applications adds another level of complexity.)

By Joe Kissell Photo Illustrations by Peter Belanger

in step

C

LOVE IS ALL
LOVE IS ALL

Sync Personal Data

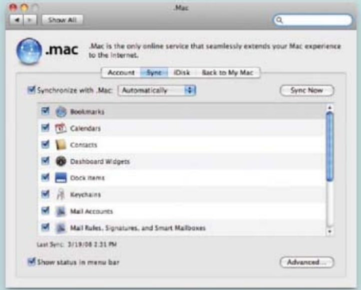
Among the many kinds of data you might want to sync between Macs is a category I'll refer to as personal data—contacts, calendars, bookmarks, keychains, preference files, and so on. Apple has built synchronization capabilities for this sort of data directly into OS X, in the form of its Sync Services framework; however, taking advantage of Sync Services requires either a $100-per-year .Mac membership or third-party software.

Use .Mac Sync

If you're a .Mac member, you can use .Mac Sync, which supports many kinds of data: Address Book contacts; Dashboard widgets; Dock items; iCal calendars; Safari bookmarks; OS X keychains; Mail account settings, rules, signatures, smart mailboxes, and notes; and application preferences. (Note that when MobileMe replaces .Mac, this process may change considerably; for more on MobileMe, see page 21.)

In most cases, .Mac Sync operates at the level of individual records (such as iCal events or Keychain items); this increases syncing efficiency and reduces the likelihood of conflicts. When you sync your data with .Mac, OS X copies it to or from Apple's servers behind the scenes, rather than directly between Macs, so both computers don't need to be online at the same time (or even be able to communicate directly with each other).

To turn on .Mac Sync, open the .Mac preference pane. If the Account tab does not already show you as logged in, enter your .Mac user name and password. Now click on the Sync tab (see ".Mac Sync"). Select the Synchronize With .Mac option and choose how often you'd like to sync (or choose Automatically, which syncs either once per hour or more often if OS X detects that information has changed on one of your computers). Click to put a check mark in the check box for each kind of data you want to sync; then click on Sync Now. Repeat this procedure on each Mac you want to sync. (Although the process sounds simple, you may encounter problems when you try syncing—see "Solve .Mac Sync Problems" for advice.)



.Mac is the only online service that seamlessly extends your Mac experience to the Internet.

☑ Synchronize with .Mac: Automatically

☑ Bookmarks
☑ Calendars
☑ Contacts
☑ Dashboard Widgets
☑ Dock Items
☑ Keychains
☑ Mail Accounts
☑ Mail Rules, Signatures, and Smart Mailboxes

Last Sync: 3/19/08 2:31 PM

☑ Show status in menu bar

.Mac Sync Setting up .Mac Sync couldn't be easier—simply select the types of data you want to synchronize and then choose how often the syncs should occur.

Use SyncTogether

If you're not a .Mac member, you can also sync your personal data with Mark/Space's SyncTogether 1.0.2 (♦♦♦; $50 for up to three Macs; macworld.com/3603). This program uses Sync Services, just as .Mac does, but it lets one of your Macs function as the server that coordinates syncing among your computers, rather than relying on Apple's servers. Unlike .Mac Sync, SyncTogether doesn't support keychains, and it has a number of other minor limitations. But it allows you to sync data between different users, something .Mac Sync doesn't allow (and at $50, it will cost you a lot less than .Mac's yearly fee, so it may be a better buy if you don't need any of .Mac's other features).

After you have installed SyncTogether on each of your Macs, launch it and follow the setup assistant's instructions. You'll be prompted to designate one of your Macs as a *server node*, so choose one that's likely to be on and available as often as possible. Other Macs in your group will be *client nodes*. Once you've set each of your Macs as nodes in the same group, you can select the types of data to sync (as in .Mac Sync) and specify a syncing frequency—anywhere from every 15 minutes to weekly (you can also choose to sync manually if you prefer).

After the initial setup, SyncTogether provides almost the same day-to-day experience as .Mac Sync for Macs on the

Set Up File Sharing

When you use a synchronization utility to sync two Macs, one computer must be able to access the other's hard drive.

On a Local Network The easiest way to set up file sharing is with OS X's built-in file-sharing feature. To turn it on, open the Sharing preference pane and select the File Sharing option (see "Sharing Preference Pane"). Click on the plus-sign (+) button under Shared Folders, and select a folder or volume to share; note that you'll be able to synchronize only items within this folder or volume, so you'll likely want to choose your user folder. Your name should appear in the Users list with read and write access, so you can use your own user name and password to log in to this computer from another Mac. To enable another user to connect with a password that's different from yours, click on the plus-sign button under Users, select an existing name or click on New Person, and enter a user name and password.

Now, on another Leopard-running Mac, look in the sidebar of any Finder window; the computer you just activated file sharing on should appear under Shared. Select that computer's icon, click on Connect As, and enter the user name and password you set up for that computer. Once you're connected, double-click on the name of the shared folder or volume to mount it—the other computer's files should now be visible to any synchronization utility.

Over the Internet—Back to My Mac Accessing another Mac is trickier when the two computers are not on the same local network. If you're a .Mac member running Leopard and you've activated Back to My Mac (via the .Mac preference pane's Back To My Mac tab) on each computer, you should be able to see your other computers even when you're on different networks (say, one computer at home and the other at work), though you may have to configure your router or firewall to enable outside access. (Apple provides detailed usage and troubleshooting information, which you can get at macworld.com/3670; check it out if the feature doesn't work as expected).

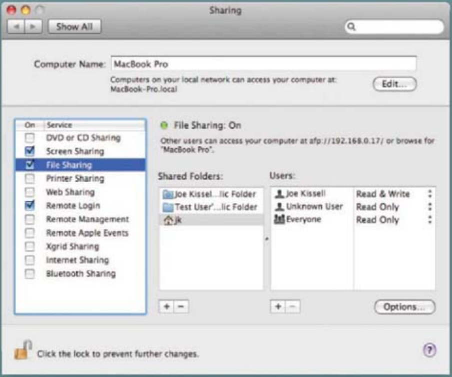
Over the Internet—Other Options If you're not a .Mac member or you're not running Leopard, accessing a Mac remotely requires more effort. One approach is to use a VPN. For example, if you have file sharing turned on at work and you connect to your corporate network from home via a VPN, your work Mac's volume should be accessible, as with a local Mac.

Going in the other direction (accessing your home computer from work) without a VPN requires that you know your home Mac's public IP address. (To find this out, open a Web browser on your home Mac and go to whatismyip.com. If you don't have a static IP address, try a Dynamic DNS service such as DynDNS (basic service is free; www.dyndns.com) to assign a domain name to your home Mac; then the included software informs the company's domain name servers whenever your Mac's IP address changes, so you can always connect using the domain name regardless of the current IP address.

In addition to knowing your home Mac's IP address or domain name, you may need to set up your router to use port forwarding, in which all requests from outside your home network directed to a particular port (such as 548, the one used by AFP for file sharing) go to a specific computer on your network. You can learn more about setting up port forwarding at PortForward.com.

Once you have port forwarding configured at home, go to your work Mac and choose Go: Connect To Server in the Finder. In the Server Address field, enter `afp://` followed by your home computer's IP address or domain name, and click on Connect. Your home Mac's drive should mount in the Finder.

If All Else Fails If you lack the geek mojo to work your way through all of those details but you still need to sync, for example, a home computer and a work computer, consider trying a slightly lower-tech alternative: an external hard drive that you shuttle between locations. You can either use the drive to store all the files you need to access in both places, or synchronize your work Mac with the drive before and after switching locations.



Computer Name: MacBook Pro

Computers on your local network can access your computer at: MacBook-Pro.local

On	Service
☐	DVD or CD Sharing
☑	Screen Sharing
☑	File Sharing
☐	Printer Sharing
☐	Web Sharing
☑	Remote Login
☐	Remote Management
☐	Remote Apple Events
☐	Xgrid Sharing
☐	Internet Sharing
☐	Bluetooth Sharing

● File Sharing: On

Other users can access your computer at afp://192.168.0.17/ or browse for "MacBook Pro".

Shared Folders:
- Joe Kissel...lic Folder
- Test User'...lic Folder
- jk

Users:	
Joe Kissell	Read & Write
Unknown User	Read Only
Everyone	Read Only

Sharing Preference Pane By adding your user folder (or another folder) to the Sharing pane, you can make it available to other Macs on your network.

same local network, though it's considerably more complicated to synchronize with remote Macs, as this requires either a VPN (virtual private network) connection or knowledge of the remote Mac's IP address.

Sync Files

Most people with multiple Macs need to synchronize more data than .Mac Sync can handle—such as word processing documents, spreadsheets, PDF files, e-mail messages, photos, videos, and music. If you're a .Mac member, you can put files you want to sync on your iDisk. Then open the Mac preference pane on each Mac you want to sync, go to the iDisk tab, and make sure that iDisk Sync is set to On (if it isn't, click on the Start button). This creates a local copy of everything on your iDisk, which you can access even when you're offline. As long as Update is set to Automatically, whenever you save a file to your iDisk, OS X uploads it to Apple's servers and downloads it to any other Mac you've set up in the same way.

If you're not a .Mac member, if you need more online storage space than .Mac provides (10GB by default, with a maximum of 30GB for an extra $100 a year), or if you want to be able to access your files from your mobile phone, you can try a program that was still a beta release at press time: Sharpcast's SugarSync (subscriptions start at $25 per year; www.sugarsync.com), which securely synchronizes your selected folder(s) to the company's servers and to other computers you own (see "SugarSync"). Evenflow's Dropbox (www.getdropbox.com), also a beta release at press time, provides a similar service with an impressively simple user interface, and Jungle Tools' JungleDisk (www.jungledisk.com) can accomplish nearly the same thing, using Amazon.com's S3 service.

However, syncing one or more folders on your iDisk or using a service like SugarSync may not meet all your needs, especially if you have huge volumes of data or if you want the speed of direct Mac-to-Mac transfers (instead of waiting for an upload followed by a download). In such cases, a better bet is to use a file-synchronization utility. (For such a utility to work, your computers need to see each other over a network; see "Set Up File Sharing" for details.)

How Sync Utilities Work

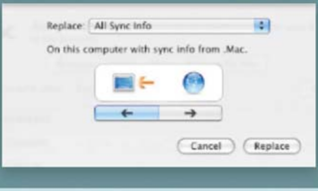
Almost all synchronization utilities have certain features in common. You specify two locations you want to synchronize—say, a folder on your laptop and the corresponding folder on your desktop Mac. Then you choose the direction of the synchronization: you might specify that files copy from the desktop to the laptop only, from the laptop to the desktop only, or in both directions (thus making sure both locations end up with identical contents). You may also have to determine the

Solve .Mac Sync Problems

Perhaps the most common problem with .Mac Sync is that sometimes, even after repeated syncs, the data in one location still doesn't match the other (and synchronization failures may not be accompanied by error messages). The first thing you should try if this problem arises is resetting your sync data—that is, erasing either the synchronized data on the .Mac servers or what's on your Mac, and copying over it entirely with what's on the other side.

To do so, go to the .Mac preference pane's Sync tab, click on Advanced, and then click on Reset Sync Data. Choose All Sync Info (or a specific type of data if your problems involve just one) from the pop-up menu at the top of the window. Then click on either the left arrow (to erase the data currently on your Mac and replace it with what's on .Mac) or the right arrow (to erase the data currently on .Mac and replace it with what's on your Mac). Click on Replace. Repeat this entire procedure on each of the computers you sync with .Mac. But be careful to choose the correct arrow each time. For example, if your MacBook has correct data but your iMac doesn't, you'll first follow these steps on your MacBook, choosing to overwrite the information on .Mac with the information on your computer. Then when you reset your iMac, you'll choose to overwrite its data with what's on .Mac. Data will flow from one computer to .Mac to another computer—without getting jumbled in the process.

In rare cases, even resetting your .Mac data won't solve sync problems. If this happens, go back to the .Mac pane's Sync tab, click on Advanced, and select each computer in the list, one at a time, clicking on Unregister after each one and confirming that you do indeed want to unregister them. When you've unregistered your last computer, another window will appear, asking whether you'd like to delete unused information from .Mac. Put a check mark in each of this window's check boxes, and click on Delete to completely erase your sync data from the .Mac servers. Then open iSync (in the /Applications folder), choose iSync: Preferences, click on Reset Sync History, and confirm by again clicking on Reset Sync History; this erases all your sync data from your Mac. Finally, repeat the entire .Mac Sync setup process again, one computer at a time.



Replace: All Sync Info

On this computer with sync info from .Mac.

action the software should take when both locations contain a file with the same name but different contents—choices include overwriting the older file with the newer one, renaming one of the files and keeping both, and pausing to let you decide what to do on a case-by-case basis.

Sync software lets you specify two locations you want to synchronize plus the direction of the synchronization.

After you set up your preferences and activate a sync, the software scans the files in both locations and copies just the ones that aren't already the same in both places. Depending on how you set things up, the software may also delete files from one side that were deleted on the other, in order to make the two locations identical. Some synchronization software can perform syncs automatically on a schedule or when other trigger events occur, such as mounting a network volume. This can be useful, for example, if you want to synchronize your laptop with your desktop Mac every time you come home from a business trip and connect to your local network.

Dozens of applications, including many backup programs, can do all this. *Macworld* has recently reviewed several: Econ Technologies' $30 ChronoSync 3.3 (♦♦♦♦; macworld.com/3640), Softobe's $40 FoldersSynchronizer X 3.6.3 (♦♦♦; macworld.com/3642), and Qdea's $100 Synchronize Pro X 6.0.1 (♦♦♦♦; macworld.com/3606; Qdea also offers the $30 Synchronize X Plus 3.5, which has many of the syncing features that its Pro sibling does). My favorite is ChronoSync, which has a wide range of options for customization and scheduling, and has been highly reliable in my testing.

Choose Which Files to Sync If both Macs have suitably large hard drives and you do similar work on each, you might consider synchronizing your entire user folder between the two, as that folder likely contains all your personal files. Because your user folder includes, by default, all your music, photos, and e-mail, not to mention the information included in a .Mac sync (contacts, calendars, and so on), syncing the whole thing can eliminate the need to come up with a separate strategy for each kind of data.

However, syncing *all* your data in this way can be highly problematic—in fact, it can actually lead to data loss if you've used both computers between synchronization sessions: If you've changed database files (including those that Mail, Entourage, or iTunes uses), disk images (such as the ones that hold Windows installations for Parallels Desktop or VMware Fusion), or other similar files, one computer's version of the file will overwrite the other's, rather than synchronizing specific data within the files. Unless you know for sure that files will not change on either computer while the other is in use, it's much safer to restrict synchronization to more-specific folders.

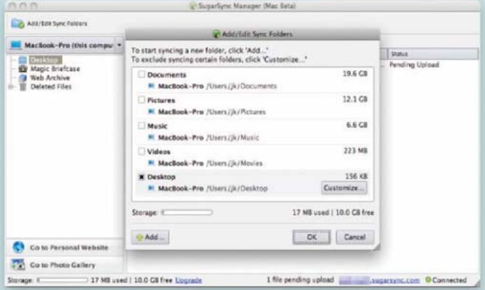
If you normally keep the documents you create in your Documents folder or in one of its subfolders, syncing the Documents folder between two Macs is a reasonable choice. However, you may want to be more selective. For example, let's say you use your desktop Mac for page-layout work in Adobe InDesign and store those files in Documents, but you never use InDesign on your laptop. You can save time and disk space by excluding the folder(s) for desktop-publishing documents from syncs. Or if you use your laptop mainly to edit Microsoft Office documents related to a particular project, you might decide to synchronize only the folder(s) you store that data in.

File Syncing Tips

For the most part, once you've selected the files you want to sync, getting the synchronization done is simply a matter of choosing a source, a destination, and the particular options in your synchronization utility, and then clicking on a button to synchronize. However, a few tips may help you avoid potential pitfalls:

> Don't Sync Applications Many applications store essential components outside of the Applications folder (for example, in /Library/Application Support and other Library subfolders, not to mention preference files), and chances are good that you'll miss some of those pieces when you try to sync applications. The result could be malfunctioning programs on one or all of your computers. For more reliable operation, install applications on each computer separately.

> Test Syncs First Many sync utilities offer a test mode that lets you see what



To start syncing a new folder, click 'Add...'
To exclude syncing certain folders, click 'Customize...'

☐ Documents 19.6 GB
MacBook-Pro /Users/jk/Documents

☐ Pictures 12.1 GB
MacBook-Pro /Users/jk/Pictures

☐ Music 6.6 GB
MacBook-Pro /Users/jk/Music

☐ Videos 223 MB
MacBook-Pro /Users/jk/Movies

☒ Desktop 156 KB
MacBook-Pro /Users/jk/Desktop

Storage: 17 MB used | 10.0 GB free

Storage: 17 MB used | 10.0 GB free

1 file pending upload

SugarSync Select the folders you want to keep in sync, and SugarSync synchronizes them to the company's servers in the background.

changes *would* be made during a sync, without actually copying any files. More than once, checking out these sync scenarios ahead of time has saved me from losing files to user error. For example, you can click on ChronoSync's Trial Sync button instead of its Synchronize button, or you can go to FoldersSynchronizer X's General preference pane and select Show Preview in the Before Sync section.

> Delete with Caution When you're performing a bidirectional sync, as you most likely will when synchronizing two computers that are both used actively, you can use sync utilities to specify whether to delete files that have been removed from the other side. This may be what you want to do, but note that it could also cause you to lose important data if you have a preference set incorrectly or if you delete a file by mistake. At least for the first few runs, until you're comfortable with the way your synchronization process works, choose a setting that moves deleted files to another folder or that asks for your approval before deleting them.

> Sync Selectively In certain situations, you won't want to synchronize all your important files between both of your computers. For example, you may not need many of the files in your desktop Mac's Downloads folder to be transferred to your laptop—especially if the laptop is short on disk space.

Sync E-mail

Although .Mac Sync or SyncTogether can ensure that all your Macs have the same Mail settings, they don't synchronize your e-mail messages. If your goal is to have exactly the same messages—including all your saved and sent mail—on two or more machines, there's an easy way and a hard way to do so.

Server-Based Accounts

The easy way to sync your e-mail, which works with almost any e-mail client, is actually to not sync your e-mail at all, and instead use a server-based account (.Mac, IMAP, or Exchange). With these accounts, all your incoming, saved, and sent mail is stored on a mail server. You can configure your e-mail program to keep local copies of all your messages, too, so that you can read and search them even when you're offline.

Your existing e-mail provider may already offer IMAP access to your mail. (We have more advice on using IMAP at macworld.com/3661, including switching from POP.) Another option, available to everyone, is to get a free, IMAP-capable Google Gmail account.

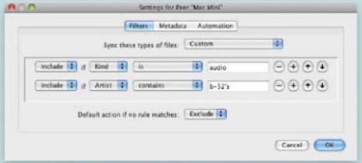
Local E-mail Messages

If you're stuck with a provider (say, your employer) that supports only POP-based access to your e-mail, or if despite having an

IMAP account you've stored some of your messages locally on your Mac, you'll have to turn to file-based synchronization.

You can, of course, simply copy all the files that pertain to your e-mail from one Mac to another. However, both Mail and Entourage throw wrenches into the works. Mail stores all your messages as individual files, but it also relies on a database to store an index of your messages for faster display and searching. You can synchronize two folders with different sets of messages easily enough, but if you try to synchronize the database files, one will entirely overwrite the other, so Mail's message lists will be incorrect. Entourage, meanwhile, stores all your e-mail data in one huge database file. So once again, even though you can synchronize that file between Macs, you synchronize only individual parts of it—if you've received messages on both computers since your last sync, there's no way to merge the two databases. But all is not lost; you just have to be very careful in how you proceed.

To sync Mail messages, first make sure Mail isn't running on either computer. Using your favorite sync utility, synchronize the entire Mail folder (*your user folder*/Library/Mail) bidirectionally between your two Macs. (This synchronizes everything, including On My Mac mailboxes, rules, and junk-mail statistics.) Then—only after the first time you do this—navigate to that Mail folder in the Finder on each Mac and drag the Envelope Index file to the Trash. Launch Mail and allow it to reimport your messages (which means it's really rebuilding your message database). Quit Mail on one of your Macs. From now on, be sure to run only one copy of Mail at a time. Before switching to the copy running on your



Settings for Peer "Mac Mini"

Sync these types of files: Custom

Include if Kind is audio

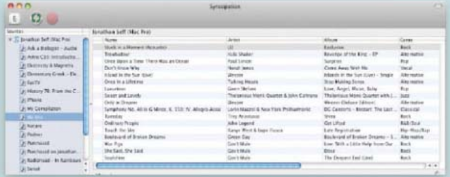
Include if Artist contains b-52's

Default action if no rule matches: Exclude

MyTuneSync Using rules in myTuneSync, you can specify which iTunes data should be included in and excluded from synchronization.

other Mac, use your synchronization utility to resync the Mail folders.

With Entourage, your only option is to entirely overwrite one computer's copy of the database with the other's copy. If the two have different sets of messages before you start, you'll lose data. Therefore, your best bet by far is to switch to IMAP or another server-based account, so that syncing becomes automatic. However, if you're sure that one copy of Entourage is a superset of the other (so you won't lose any messages by overwriting the other one), you can sync one Mac's copy of the Entourage database to the other Mac. To do this, make sure Entourage isn't running on either computer. Use the sync utility of your choice to synchronize your Entourage database between your two computers (by default, it's located at *your user name*/Documents/Microsoft User Data/Office 2008 Identities/Main Identity/Database). Thereafter, make sure you run only one copy of Entourage or the other at one time, and that you immediately sync your databases after each use.



Syncopation With Syncopation, you can use a master-client mode in addition to peer-to-peer syncing.

Sync iTunes

iTunes can easily share its content over your local network. But if you want a complete copy of your media library on more than one Mac, you'll need to synchronize some files. (For detailed instructions on syncing photos in iPhoto, go to macworld.com/3655.) However, merely copying, say, a folder full of AAC files from one Mac to another is not enough; you must also copy the iTunes Library files containing metadata, playlists, and other important information. And therein lies the rub: If you've changed the contents of iTunes on both Macs, merely copying the iTunes Library files in one direction or the other (manually or with a file-synchronization utility) won't synchronize their *contents*, so neither iTunes library will be correct. For example, songs present on both Macs' hard disks may not actually show up in iTunes on one Mac or the other, and one Mac's playlists might entirely overwrite the other's.

If possible, use a server-based e-mail account (IMAP) instead of trying to synchronize two Macs.

The best way to solve this problem is with a specialized synchronization utility that not only copies music and video files between computers but also updates the iTunes Library as necessary on both sides. One option is SocketHead Studios' myTuneSync ($30 for three computers; www.socketheadstudios.com).

You begin by installing myTuneSync on each computer you want to sync (this can include Windows PCs running iTunes). After you select another computer on your network to function as a peer, choose a category of iTunes content to sync with that peer—that could be everything or, say, only audio files or only unprotected video files. If you want to be more specific about which content to sync, you can set up one or more rules (much like iTunes smart playlists) that include or exclude tracks based on criteria such as artist, name, genre, or size (see "MyTuneSync"). You can then sync manually or automatically—and during each sync, you can opt to include or exclude individual tracks from among those that meet your criteria. This utility has a wide variety of other options, such as the ability to sync metadata (such as ratings and play counts), password-protect each computer, and restrict shared tracks to a particular playlist.

If myTuneSync doesn't offer all you're looking for, a different utility may serve you better—such as Sonzea's Syncopation 2.0.1 ($25 for up to five Macs; www.sonzea.com) or Martian Technology's SlingShot 2.0 ($30 for unlimited Macs; www.martian.com), which also functions as an all-purpose file-synchronization tool. Both programs let you share one or more individual playlists from each of your Macs rather than using rules to specify what should be shared. With Syncopation, you can choose to include or omit movies, podcasts, and TV shows from your syncs. SlingShot also lets you assign a separate password to protect each shared playlist.

The Last Word

Synchronization can be tricky, but it is possible. The release of Leopard (and with it, Back to My Mac and improvements to .Mac Sync) was a great step in the right direction, and third-party utilities can ably fill in some of the remaining gaps. Once you have the right tools and a sound strategy, you can keep your Macs happily in sync with a minimum of effort. ☒

Joe Kissell is the senior editor of TidBits and the author of numerous e-books about OS X (www.takecontrolbooks.com).

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RETURN OF THE CLONES!

For a few years in the mid-'90s, there were Mac clones, computers that ran the Mac operating system but weren't made by Apple. Shortly after Steve Jobs's return, Apple shut down official Mac cloning for good.

But today's Macs are really Intel-based PCs. And anyone with a little bit of know-how can assemble a PC out of parts similar to those that Apple uses to build Macs. Throw in the work of a group called the OSx86 Project, which has altered OS X to run on PC hardware, and Mac clones are once again a reality.

Are they legal? Probably not, because the license that comes with Mac OS X specifies that it be installed only on Apple-branded hardware. But Apple hasn't gone on the offensive to prevent hobbyists from installing OS X on their home-built PCs. And at press time, a company named Psystar was selling an Intel PC with a preinstalled version of Mac OS X. (It's entirely possible, though, that by the time you read this Psystar will have received an unpleasant letter from Apple's lawyers.)

Although most Mac users won't want to cross over to the dark side and run Mac OS X on non-Apple hardware, we here at *Macworld* are a curious lot. Which is why we set out on a journey to discover whether a Mac really is more than the sum of its parts, by building a Mac clone, buying a Psystar Open Computer, and testing them both in Macworld Lab.

You can run OS X on an Intel PC. But should you?

BY ROB GRIFFITHS

PHOTOGRAPHY BY PETER BELANGER

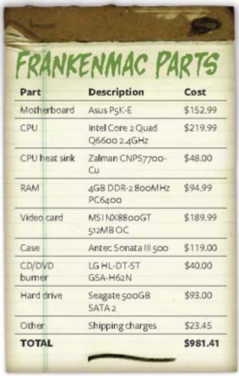
It's Alive!

There's a gap in Apple's desktop lineup. The Mac Pro is overkill, and the Mac mini isn't expandable. While the iMac has become a strong option for many (as we related in our story "The New Rules for Buying a Mac," June 2008), a lot of Mac users would prefer having a system with much more room for expansion.

I'm one of those people. So that's what I decided to build. I call my creation the Frankenmac.

Picking Out Parts To create my dream Mac system, I set myself a budget of $1,000 (not including a keyboard, monitor, and mouse), and started shopping for computer parts.

When you build your own PC, you must decide exactly what goes into it. You must choose the motherboard, processor, cooling system, video card, hard drives, CD/DVD burner, memory, case, and more. And if you're building a Mac-compatible PC, you have to limit yourself to hardware that's compatible with Mac OS X. I spent a lot of time searching on the Web to find out what would work and what wouldn't. As you can see in "Frankenmac Parts," the total parts cost was just over $980.



FRANKENMAC PARTS

Part	Description	Cost
Motherboard	Asus P5K-E	$152.99
CPU	Intel Core 2 Quad Q6600 2.4GHz	$219.99
CPU heat sink	Zalman CNPS7700-Cu	$48.00
RAM	4GB DDR-2 800MHz PC6400	$94.99
Video card	MSI NX8800GT 512MB OC	$189.99
Case	Antec Sonata III 500	$119.00
CD/DVD burner	LG HL-DT-ST GSA-H62N	$40.00
Hard drive	Seagate 500GB SATA 2	$93.00
Other	Shipping charges	$23.45
TOTAL		**$981.41**

When I set out to configure my machine, I wanted to make it reasonably fast, with the best video card I could fit into my budget, and lots of room for expansion. (I plan on using it for cross-platform testing and for running key Windows productivity software such as Half-Life 2, Crysis, and Microsoft Flight Simulator.)

Building It After all of the parts arrived at my home, it took me a few hours to build the machine. If you've never built your own computer before, it's an interesting experience—there's something quite satisfying about putting it all together, powering it up, and hearing that first "beep" that lets you know you haven't just turned your collection of parts into a collection of junk. Of course, if you *don't* hear the beep, you'll have an entirely different reaction, one that borders on panic. Thankfully, I heard the beep.

I spent a lot of time searching for OS X–compatible hardware. The total parts cost was just over $980.

Next, I installed Vista on the PC, just to make sure everything functioned. From there, I spent several hours getting OS X to work right; while the process is straightforward, there are a lot of steps involved and a number of BIOS settings to tweak. To install both Windows and OS X on one drive, I had to jump through even more hoops. But finally, after many hours of reading, assembling, disassembling, screaming, installing, uninstalling, reinstalling, cursing, pestering friends, and generally not having much fun, I was done: my machine was up and running, and capable of booting into either Windows Vista or Mac OS X 10.5.2.

Getting Started From the outside, my machine doesn't look anything like a Mac. The case from Antec is a glossy black, with a door that hides the externally accessible drive bays, along with two USB ports, one external SATA port, and audio jacks on a shiny metallic strip on the front. And when it starts up, the BIOS-loading screen and black-and-white text-based boot loader (which lets you choose between Vista and OS X) is a dead giveaway that this is not your normal Mac.

However, if I were to hide the case and set you down in front of the monitor when the system was already running, you'd be convinced you *were* using a "real" Mac. It ran all the OS X programs I tried without problems.

On the hardware front, everything also seems to work fine. The onboard Ethernet, audio, USB, external SATA, and FireWire ports all function. My Wacom tablet worked without a hitch.

After a week or so with the Frankenmac, it was time for me to transfer it from my own personal mad-scientist lab to Macworld Lab, where it could be speed-tested against real Macs and the Open Computer clone from Psystar. The results were pretty good—see "It Came from the Lab!" for all the details.

I've Created a Monster!

Given the positive result of my tinkering, you may be tempted to build your own Mac clone. Before making such a decision, however, you need to consider the pitfalls of building or buying your own Mac clone—and there are many.

Parts Is Parts Building a computer from parts isn't a simple thing to do—to put everything together, you'll need patience and the ability to follow poorly translated instructions. To get the best pricing on the various parts, you have to be willing to shop around. I wound up buying parts from four suppliers, and by doing so, I saved close to $200. But finding the cheapest parts takes time and effort.

Once you've built your machine, the end product isn't something you'll be able to get serviced at your local Mac store. It doesn't even have a single warranty—each part has its own, which means you'll be in for a service nightmare if you have problems. You'll have to diagnose the cause, figure out which part or parts are involved, negotiate a return approval from each involved supplier, and then ship those parts out for replacement. One of the companies I bought parts from went out of business shortly thereafter, so I'm unlikely to get service if any of those items fail.

Even if your machine is running fine, you may experience odd hardware issues. When I shut down the Frankenmac, Mac OS X itself shuts down and the screen goes blank, but the fans and hard drive continue to run until I press the power button.

Software Issues Future system updates may cause problems with the Mac OS X installations on both the Frankenmac and the Open Computer. Since Apple obviously doesn't test for compatibility with these systems, the next software update could very well wreck everything. Though Psystar released a version of Mac OS X 10.5.3 for the Open Computer, the lack of support for software updates directly from Apple makes us extremely uncomfortable.

Legal Matters Finally, and perhaps most importantly, to make your machine run Mac OS X, you have to violate the OS X end-user license agreement—and perhaps copyright law, depending on how you go about building it. That's a big issue for people who might take the build-it-yourself route, and of course it calls into question the future of any company that attempts to make a business out of building Mac-compatible PCs.

There's nothing inherently wrong with making a PC that happens to use components known to work in Mac OS X, but whoever installs Mac OS X on that computer—you or the company supplying it to you—is entering an area that is legally gray at best and flat-out illegal at worst.

Design and Aesthetics Beyond the functional, legal, and moral issues, there are aesthetic and design concerns. While

IT CAME FROM THE LAB!

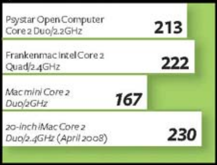
BY JAMES GALBRAITH

While Rob was assembling his home-built Frankenmac, we were ordering a Psystar Open Computer (www.psystar.com) for testing in the Macworld Lab. The system we bought features a 2.2GHz Intel Core 2 Duo processor, 2GB of 667MHz RAM, and a 250GB hard drive with Mac OS X preinstalled. Though Psystar's base model includes Intel's integrated graphics, we splurged and purchased an Nvidia GeForce 8600GT for $110. We also purchased a FireWire add-on card. Total cost for the system we ordered was $715.

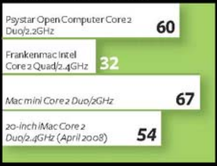
It was obvious right away that product packaging is one area where Psystar is not following Apple's lead. When the box arrived, we found it stuffed with white foam packing peanuts, which made the unpacking process a big mess.

Macworld **Lab Test**

Speedmark 5 Test Results



Cinema 4D XL 10.5 Test Results



For Speedmark scores, longer is better. For Cinema 4D XL scores, shorter is better, and results are in seconds. Reference systems are in italics. Speedmark 5 scores are relative to those of a 1.5GHz Core Solo Mac mini, which is assigned a score of 100. All systems were running Mac OS X 10.5.2 with 2GB of RAM.—MACWORLD LAB TESTING BY BRIAN CHEN, JAMES GALBRAITH, AND JERRY JUNG

For complete benchmark test results, please visit macworld.com/ 3630

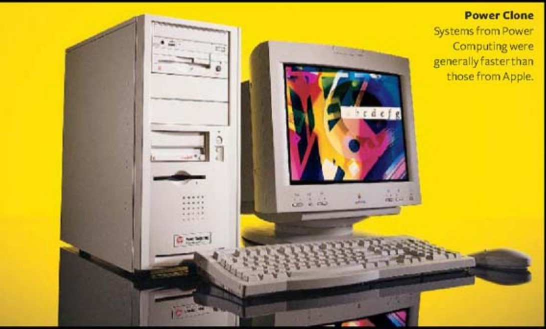
When we tried to start up the computer, it made a noise like we'd turned on a garbage disposal. It turns out that one of the internal power cables was getting caught in the fan. After we rerouted the cable, the crunching sound disappeared, but the fan was still loud.

We also couldn't get Time Machine to run properly, though Psystar released a fix. (Of course, if Psystar were to disappear, future fixes would also vanish—scary.) The Open Computer also can't handle FireWire Target Disk Mode, Safe Boot, zapping of PRAM, or startup drive selection via the option key.

Open Computer Overall, the Open Computer's performance ranked somewhere between a 2GHz Mac mini and a 2.4GHz Core 2 Duo iMac. Speedmark 5 results show the Open Computer to be quite a bit faster than the high-end Mac mini, but slower than the low-end iMac. However, the upgraded graphics card we bought enabled the Open Computer to blow away the iMac in our tests of 3-D game performance.

The Frankenmac Rob Griffiths's $980 Frankenmac system performs like a higher-end iMac, with a few test results rivaling Apple's fastest Mac Pros. The Frankenmac earned a Speedmark 5 score of 222, slightly slower than that of the 2.4GHz Core 2 Duo iMac.

One area in which the Frankenmac failed to live up to expectations was in our series of hard-drive tests. Rob configured the Frankenmac so that three operating systems were running on separate partitions on the machine's 500GB drive, which probably slowed things down a bit. In more processor-based tasks, such as MPEG compression and 3-D rendering, the Frankenmac's four processing cores helped it beat all our other reference systems handily.



Power Clone Systems from Power Computing were generally faster than those from Apple.

THE CLONE WARS

In April 1995, Power Computing CEO Steve Kahng was asked how his company, which had just released its first Mac clones, planned to compete with Apple Computer. "We're going to squeeze a nickel out of every dime," he said, smiling.

Two and a half years and three Apple CEOs later, Steve Jobs took back that dime. In between were the clone wars, which ravaged both Apple's reputation and its bottom line.

At first, Apple's decision to license its system software and motherboard designs to third-party manufacturers seemed like a good idea. Licensing Apple's crown jewels would jump-start the Mac platform in the same way that free access to the MS-DOS operating system had done for the PC platform, or so the reasoning went. But it didn't work out that way.

Apple announced its licensing program in December 1994, with Power Computing as the first licensee. A slew of other clone-makers jumped in (see a complete chronology at macworld.com/3665).

On August 24, 1995, however, came an event that threw the entire Mac market into disarray: the release of Windows 95, which brought numerous Mac-like features to PCs for the first time.

Apple finished 1995 having sold a record 4.5 million Macs, but its wheels were already beginning to wobble, if not fall off entirely. In May 1996, Power Computing announced that it had sold 100,000 clones in its first year of operation. A *Wall Street Journal* article reported that a full one-half of the people who bought Power Computing machines would otherwise have bought a Mac from Apple. The licensing program was clearly cutting into Apple's bottom line.

Then, in December 1996, Apple announced that it had acquired NeXT Software, and with it that company's CEO, Steve Jobs. That was the good news; the bad news was that Apple sold only 4 million Macs in 1996. Apple's product line lumbered along, with ill-performing Performas and other humdrum machines. Power Computing was consistently shipping faster, less-expensive computers than Apple's.

Something had to be done. Jobs retook the reins at Apple, displacing Gil Amelio. After failing to renegotiate Apple's contracts with the clone vendors, Jobs came up with a masterstroke of banzai management. Since all clone licensing deals were limited to System 7, the next iteration of Apple's operating system was dubbed Mac OS 8, shutting out all the clone makers.

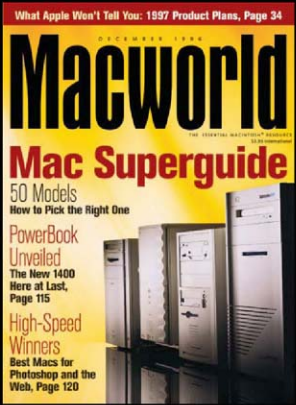
Jobs had pulled the plug on the clones, and in September Apple bought Power Computing's assets. Within eight months the last clone maker had dropped out of the Mac market. The clone wars were over, but Apple had sustained serious casualties. In 1997, Apple sold a mere 2.8 million Macs. It took the company years—and numerous innovative products such as the iMac and iPod—to rebound.

Apple's move to Intel chips has led some observers to suggest that the clone days might return.

The chances of that happening? Slim to none, given the impact of Mac clones on Apple's bottom line the last time around.

Apple seems to have had its fill of clones, if the words of Phil Schiller, the company's senior vice president of worldwide product marketing, are anything to go by. "We will not allow running Mac OS X on anything other than an Apple Mac," Schiller said in the wake of Apple's 2005 switch to Intel chips.

We believed him then, and we believe him now. A few hobbyists may hack their PCs to run OS X, but the days of official Mac OS licensing are long gone.—RIK MYSLEWSKI


What Apple Won't Tell You: 1997 Product Plans, Page 34
DECEMBER 1996
Macworld
Mac Superguide
50 Models
How to Pick the Right One
PowerBook Unveiled
The New 1400 Here at Last, Page 115
High-Speed Winners
Best Macs for Photoshop and the Web, Page 120

Clone Lineup In 1996 *Macworld*'s cover featured Macs from Apple, Radius, Power Computing, and Daystar.

PHOTOGRAPHS BY PAUL FRANZ-MOORE

the Frankenmac's case is attractive, it's clearly not in the same league as the case on the Mac Pro. The back has some rough edges, the front door feels flimsy, and opening the case requires removing a couple of thumb screws and wiggling a side panel loose.

If you open the cases on a Mac Pro and the Frankenmac, you can really see the difference (see "Frankenmac vs. Mac Pro"). On the Mac Pro, all the cables are hidden, the slide-in drive bays are covered with numbered doors, non–user-accessible parts are hidden behind aluminum covers, and the entire thing has the look of the engine bay in a high-end automobile. The inside of the Frankenmac, on the other hand, bears a striking resemblance to the engine bay in my first car, a 1973 Chevy Vega: loose wires everywhere, sharp edges just waiting to cut an unsuspecting finger, and parts that clearly shouldn't be touched sitting right there in the open.

The Mac Pro has function going for it as well as form. Both machines let you mount internal drives in slide-in bays; but on the Mac Pro, the drive and bay slide right into the SATA connector. On the Frankenmac, I have to dig into a bundle of cables and fish out a SATA connector, and then thread it down to the drive bay. And the Mac Pro provides eight RAM slots on two easy-to-use slide-out cards, while the Frankenmac has four slots located on a hard-to-reach portion of the motherboard.

The inside of a Mac Pro looks like a Lexus. The Frankenmac's innards look like my old 1973 Chevy Vega.

The Error of My Ways

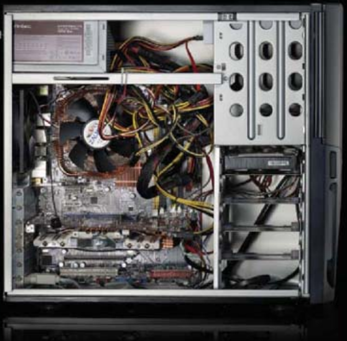
It was a lot of fun to taste the forbidden fruit of a non-Apple Mac. But the truth is, I'm not willing to live with all of the limitations of a build-your-own Mac. When I buy a machine from Apple, I know that one warranty covers everything, that all the parts have been designed to work together, that system updates won't leave me with a nonbootable system, and that as much thought went into the design of the interior of the machine as went into the exterior.

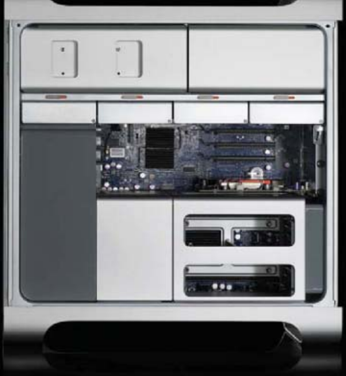
I wish Apple would make the Mac model of my dreams, so I wouldn't be caught in a no-man's-land between the Mac Pro, the iMac, and the Mac mini. But even though my minitower fantasies remain unfulfilled, I'm more than happy letting Cupertino build my Macs for me. If I've learned anything from my journey with the Frankenmac, it's that Apple is much better at building Macs than I am. ☒

Rob Griffiths is a senior editor at *Macworld* and the editor of MacOSXHints.com.

FRANKENMAC VS. MAC PRO

The Mac Pro (right) certainly boasts a much more elegant and functional internal design than the Frankenmac.





Save Time and Type Less

Tricks to help you become an efficiency expert **BY KIRK MCELHEARN**

Until Apple starts rolling thought-controlled Macs off the assembly line, we'll still depend on keyboards, mice, and trackpads to tell our computers what to do. But some of the ways we control our Macs take more time than others. Here's how to accomplish the same tasks while typing and mousing less.

Keyboard Shortcuts Rule

Still using menus to access your programs' commands? Keyboard shortcuts are called *shortcuts* for a reason. Instead of choosing File: Open from the menu, press ⌘-O; instead of Edit: Copy, press ⌘-C. Making this simple change will save you a significant amount of time and muscle fatigue.

You'll find common keyboard shortcuts listed to the right of command names in menus. (If you're mystified by what you see there, check out "Decode Shortcut Symbols.") The Mac uses many common shortcuts across all programs—for instance, ⌘-S for Save and ⌘-Z to Undo an action you just did. That makes it easy to develop a repertoire you can use at any time. (See "10 Essential Shortcuts Everyone Should Know.")

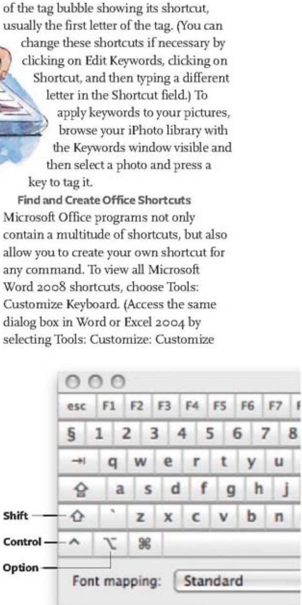
But many other menu items offer shortcuts as well, and the more you learn, the more seconds you can shave off common tasks.

Search for Apple Shortcuts Browse your menus to find keyboard combinations for the things you do the most. Discover even more by choosing the Help menu in the Finder or an Apple program you use a lot, and then typing `shortcuts` or *`program name`* `shortcuts` in the Search field. (A few programs, such as Apple's iTunes and iPhoto, even have a Help: Keyboard Shortcuts menu item.) In some cases you'll see a help topic leading to a special page that shows shortcuts, some of which don't display in menus.

In Apple's Safari, for example, you can open a page in a new tab by pressing ⌘ while clicking on a link or bookmark. Go to the Google search box by typing ⌘-option-F. Press the spacebar to jump down one screen on a Web page, or shift-spacebar to jump up.

Some programs have special shortcuts for tasks that don't involve menus. In iPhoto '08, for example, you can set shortcuts for the most common keywords you use to tag your photos. Choose Window: Show Keywords (or better yet, press ⌘-K) to see a list of keywords. Drag the ones you want to use to the top section of the window. You'll see a letter at the right of the tag bubble showing its shortcut, usually the first letter of the tag. (You can change these shortcuts if necessary by clicking on Edit Keywords, clicking on Shortcut, and then typing a different letter in the Shortcut field.) To apply keywords to your pictures, browse your iPhoto library with the Keywords window visible and then select a photo and press a key to tag it.

Find and Create Office Shortcuts Microsoft Office programs not only contain a multitude of shortcuts, but also allow you to create your own shortcut for any command. To view all Microsoft Word 2008 shortcuts, choose Tools: Customize Keyboard. (Access the same dialog box in Word or Excel 2004 by selecting Tools: Customize: Customize



Font mapping: Standard

Decode Shortcut Symbols Confused by the strange symbols you see in the shortcuts listed in your program menus? Here's a guide to the right keys.

Keyboard.) From here, you can change existing shortcuts or add your own for menu items that don't have any.

Learn from Cheat Sheets While you can browse your favorite programs' menus and help files to uncover shortcuts, there's a quicker way to see at a glance almost all the shortcuts you can use. With Ergonis Software's €20 KeyCue 4.1 (www.ergonis.com) utility, you press and hold the ⌘ key for a half second to display a window listing all the keyboard shortcuts available in the current program (see "View All Shortcuts"). Access any of these by pressing an additional key—for example, in many programs, P to print. (You're already holding down the ⌘ key.) Or use your mouse to click on a command in the list. Using KeyCue as a ready reference will also help you learn the shortcuts you use most, so that eventually you can type them directly.

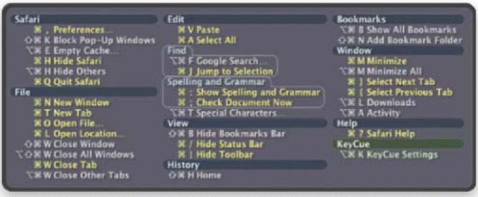
KeyCue's one shortcoming is that it can't show the hidden shortcuts some programs, such as Microsoft Office, include. It accesses only the ones displayed in menus.

Still using menus to access all your programs' commands? Keyboard shortcuts are called "shortcuts" for a reason.

Explore Shortcuts for the Web The programs on your Mac aren't the only ones with shortcuts—many Web applications use them, too. If you use Gmail, you can find a list of shortcuts (such as C for Compose, to create a new message; N for Next message; R for Reply; and so on) in Gmail's help files (macworld.com/3540). Yahoo Mail offers a similar range of short-cuts (macworld.com/3541). Likewise, you can use your keyboard for cruising through your Google Docs (macworld.com/3542).

Create Custom Shortcuts with OS X

Some programs—like those in the Office suite—let you create your own shortcuts for the tasks you perform often, but most don't. That's where OS X 10.5 (Leopard) or OS X 10.4 (Tiger) can help. If the


Safari
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⌥⌘ L Downloads
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KeyCue
⌥⌘ K KeyCue Settings

View All Shortcuts Using a utility such as KeyCue, you can see all of Safari's menu-item shortcuts at a single glance.

menu commands you use don't have keyboard shortcuts, you can in many cases add your own.

Open the Keyboard & Mouse preference pane and click on the Keyboard Shortcuts tab. Click on the plus-sign (+) button below the shortcut list. A sheet opens. Using the Application pop-up menu, choose the program for which you want to set the shortcut. If you don't see it in the list, scroll to the bottom, select Other, and navigate to that program in your Applications folder. If you want to create a shortcut that works in almost all your programs, then select All Applications in the pop-up menu. (The shortcut won't apply to some older programs or anything running in Classic mode.)

Now, in the Menu Title field, type the *exact* name of the menu item for which you want to set a shortcut. Make sure it's spelled correctly, or your shortcut won't work (see "Set Up Shortcuts"). If the menu item's name contains an ellipsis (…), type option-semicolon (;) to create that character. Click on the Keyboard Shortcut field and press the key combination you want to use. Click on OK to save the shortcut. If the program is open, quit and relaunch it. Your keyboard shortcut will appear in the menu, and you can use it whenever you want.

If your shortcut doesn't work, a different menu item may already be assigned to those keys. (Tip: avoid using the option key.) Unfortunately, you'll be warned of problems only if you're creating a Finder shortcut. Remove the problem shortcut by scrolling down the Keyboard Shortcuts list, clicking on the triangle next to the program, selecting the shortcut, and clicking on the minus-sign (–) button. Then try another key combination. If you ever want to get rid of all your custom shortcuts, click on Restore Defaults.

Type Less

Keyboard shortcuts aren't the only time-savers available to you. For instance, you may find yourself repeatedly typing the same things—your

10 Essential Shortcuts Everyone Should Know

KEYSTROKE*	ACTION
⌘-shift-A	Opens your Applications folder while in the Finder
⌘-double-click	Opens a folder in a new Finder window
option-drag	Copies a file instead of moving it in the Finder
⌘-option-drag	Makes an alias of selected item(s)
⌘-delete	Moves selected item to the Trash while in the Finder
⌘-tab	Cycles through all open programs
F11	Shows the desktop (moving aside all open windows)
F9	Shows all windows
⌘-spacebar	Starts a Spotlight search from anywhere
⌘-Z	Undoes the last action

*If you're using a laptop, you may need to add the fn key.

ILLUSTRATION BY TOM LABAFF

name, street address, e-mail address, or phrases you often need when writing a report or novel. Wouldn't it be wonderful if instead of typing `circumbendibus`, you could just type `ccm` and let your Mac do the rest?

Try Text-Expansion Software With software such as Riccardo Ettore's $27 TypeIt4Me 4 (macworld.com/3543) or Smile On My Mac's $30 TextExpander 2 (macworld.com/3544), you'll never have to type out your mailing address again. These programs let you set up a shortcut for long pieces of text, and you can even include line breaks. For example, to insert your address in your text, all you'd have to type is `aad`.

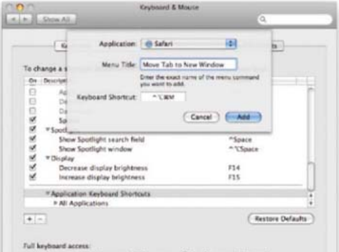
Save Time Launching Programs

When you want to launch a piece of software, you probably either click on its icon in the Dock, if the program resides there, or go to your Applications folder to double-click on its icon. (Speaking of shortcuts, when you're in the Finder, you can open your Applications folder by pressing ⌘-shift-A.) But there are quicker ways to access your programs.

Use Spotlight The first way is to use Spotlight. In Leopard, Spotlight groups applications at the top of the results list. So for instance, press ⌘-spacebar to bring up the Spotlight menu and type `saf`; you'll find that Safari is likely the top hit. If it's not, it will show in the Applications group, and you can open it without having to dig through your Applications folder. Spotlight can do this with any program, including those in your /Applications/Utilities folder.

Employ a Launcher If you're ready to become a hard-core keyboard user, you might want to look into *launcher* software. Three such applications in particular offer quick program access; in addition, they let you open files just by typing a few letters and even let you perform operations on files. Objective Development's $39 LaunchBar 4.3 (★★★★★; macworld.com/3545) is my favorite. It does all of the above, plus it lets you browse your Mac's files from its own menu, run commands on files, execute Google searches, run AppleScripts, and much more.

Peter Maurer's Butler 4.1.5 (★★★★★; donation requested; macworld.com/3546) and Blacktree's free Quicksilver (★★★★½; macworld.com/1247) offer a whole range of shortcuts and timesaving features. For example, you can create pop-up Web search boxes to search any site from anywhere, control iTunes playback from any program, use multiple Clipboards, or create pop-up menus that let you navigate any Finder folder from any application. It's worth trying them out to see what they can do for you, and especially to discover the dozens of features each of these programs offers.



Application: Safari

Menu Title: Move Tab to New Window

Enter the exact name of the menu command you want to add.

Keyboard Shortcut: ^⌥⌘M

To change a s

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☑	▾ Display	
☑	Decrease display brightness	F14
☑	Increase display brightness	F15
	▾ Application Keyboard Shortcuts	
	▸ All Applications	

Full keyboard access:

In windows and dialogs, press Tab to move the keyboard focus between: ● Text boxes and lists only ○ All controls

To change this setting, press ^F7.

Set Up Shortcuts Enter the exact name of a menu item, and assign it any key combination that's not already in use.

Make the Keyboard Your Friend

All of these strategies will help you keep your hands off your mouse. You may well find that you get more done in less time when you learn everything you can do with your keyboard. ☒

Kirk McElhearn writes about more than Macs. Visit Kirkville (www.mcelhearn.com).

ICON BY PAUL HOWALT

TRY THIS

Coordinate iPhone and Computer E-mail

Mac users who understand the appeal of Apple's technologies are likely to also carry an iPhone. Yet when you retrieve messages with both an iPhone and your Mac, the result can be an unholy mess. Some of your messages appear on one device and not another. And the iPhone, which lacks spam filtering, is inundated with crud.

Apple's MobileMe helps by syncing your e-mail to all the devices you own, but not everyone has a MobileMe account. Another way to deal with these problems is to get an IMAP (Internet Message Access Protocol) account. IMAP accounts are server-centric, meaning that their messages are stored on a central server. That means that regardless of which device you're using, you'll see the same collection of messages.

It also means you can manage messages from any device you use to access your e-mail. For example, you can delete a message with your iPhone and it's gone for good—you won't see it when you check the account with your Mac's e-mail client. Likewise, you can move messages to other folders—say, from the Inbox to an Important Archived Mail folder you've created in your copy of Apple's Mail on your Mac—and your filing efforts will be reflected on the device you next use to peer at your messages. And perhaps best of all, many of the most popular services that offer IMAP accounts—such as Gmail or Yahoo Mail, to name just a couple—also offer server-side spam filtering.—CHRISTOPHER BREEN

APC
ON BATTERY
DELAYED 1
DELAYED 2
REGULATING
LOW BATTERY
LINE OK
FILTERING
OVERLOAD
S20 POWER CONDITIONER with BATTERY BACKUP

Watch your TV...
We'll watch your TV's back

Your home theater is your passion.
You've spent thousands of dollars on equipment and countless hours on research and installation...
How are you protecting this investment?

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Headphone Buyer's Guide

Improve your iPod experience with a smart upgrade **BY DAN FRAKES**

Apple's white earbuds, included with every iPod, are pretty good as far as earbuds go. The iPhone version even features a microphone for phone calls, and a button for basic playback control. But if you're still using those earbuds, you're not enjoying your iPod to its full sonic potential. A new set of headphones is probably the most rewarding iPod upgrade you can make. To help you find the perfect set, here are the different types of headphones on the market, their pros and cons, and my picks for some of the best models at various prices.

Earbuds

Earbuds sit loosely in your outer ears. Although earbuds don't produce particularly outstanding sound, they're compact and relatively inexpensive.

Recommended Models Sennheiser MX 460 and MX 560 ($25 and $30, respectively; www.sennheiserusa.com), and V-Moda Remix M-Class ($50; www.v-moda.com).

In-Ear-Canal Headphones

These headphones, also known as *canalphones* fit snugly—and fairly deep—in your ear canals. Like earplugs, they block most external noise, so they're great for travel and noisy environments. They're also capable of producing stunning audio quality. On the other hand, some people find them uncomfortable, and the best ones come with an equally stunning price tag (visit our canalphone primer at macworld.com/2709.)

Recommended Models Ultimate Ears super.fi 3 Studio ($130; www.ultimateears.com), Shure SE210 ($180; www.shure.com), Etymotic Research ER-4P MicroPro ($299; www.etymotic.com), Ultimate Ears triple.fi 10 Pro ($400), and Shure SE530 ($500).

Canalbuds

Halfway between earbuds and in-ear-canal headphones, *canalbuds* don't block out as much external noise as the latter, and they can't match the performance of some in-ear-canal headphones. But canalbuds tend to be more comfortable than true in-ear-canal models because they don't sit so deep and so tightly in your ear canals. Plus, they're less expensive.

Recommended Models Sennheiser CX300 ($90), Ultimate Ears super.fi 4 ($130), and V-Moda BassFréq ($40) and Vibe ($101).

Lightweight Headphones

Portable and generally reasonably priced, lightweight headphones often use larger *drivers* (speakers) than earbuds and canalphones, and their earpieces rest against the outside of the ear. Some have a thin headband that goes over or behind the head; others use a small clip for each ear. Many of these models fold up as well. Although most lightweight headphones produce mediocre sound, a number of them do stand out.

Recommended Models Koss KSC35, KSC75, PortaPro, and SportaPro ($20 to $50; www.koss.com), Grado iGrado ($50; www.gradolabs.com), and Sennheiser PX100 ($60) and PMX100 ($70).

Sennheiser MX 560

V-Moda Remix M-Class

Ultimate Ears triple.fi 10 Pro

Shure SE530

V-Moda Vibe Duo

Ultimate Ears super.fi 4

Full-Size Headphones

If you don't mind a little bulk, good full-size headphones—which often fully surround your ears—sound better than good lightweight models. Some are also much more comfortable. These headphones fall into two categories: closed models, which block out a degree of external noise, and open models, which some people prefer sonically, but which also let more noise in and out. One caveat: to reach their potential, many full-size headphones require more juice than an iPod headphone jack can provide.

Recommended Models Sennheiser HD201 (closed; $35), Grado SR60 (open; $69), Beyerdynamic DT 235 (closed, better for smaller ears; $70; www.beyerdynamic.de), and Sennheiser HD555 (open; $180).

Noise-Canceling Headphones

If you're not a fan of in-ear phones, but you want something that can filter out external noise such as airplane engines, train rumblings, or the hum of a crowd, invest in a good pair of noise-canceling headphones. These headphones—which come in both lightweight and full-size models, with the latter offering better noise isolation—sample outside sound and then pipe in an inverse audio signal to "cancel out" a good deal of monotonous sound. Although they don't usually sound as good as comparable in-ear phones, they are easier to put on and take off, and they still let you hear what's going on around you.

Recommended Models Panasonic RP-HC500 ($200; www2.panasonic.com), Audio-Technica ATH-ANC7 ($220; www.audio-technica.com), and Bose QuietComfort 2 and QuietComfort 3 ($299 and $349, respectively; www.bose.com).

iPhone Headphones

Thanks to the popularity of the iPhone, a number of companies now sell iPhone-specific headphones with microphones and basic remote-control features built in. Many improve on the audio quality and microphone performance of Apple's iPhone headphones, and most use a canalbud design instead of Apple's earbud approach. (Canalbuds provide better noise isolation than earbuds, but because they partially seal off your ear canal, as earplugs do, a phenomenon called the *occlusion effect* can make your own voice sound odd—to yourself—when you're talking.)

Recommended Models Maximo iP-HS1 iMetal Stereo Headset (●●●; earbud, $70) and iP-HS2 iMetal Isolation Headset (●●●½; canalbud, $70), V-Moda Vibe Duo (●●●●; canalbud, $101), Ultimate Ears super.fi 4vi (●●●●; canalbud, $150), and Etymotic Research hf2 (●●●●½; canalphone, $179). (For a review of these five models, go to macworld.com/3667).

Senior Editor **Dan Frakes** reviews iPod and audio gear for *Macworld*.

iPhone Headphone Adapters

Griffin Technology SmartTalk

If you have a favorite set of headphones that can't connect to the iPhone's recessed headphone jack, you can buy a headphone adapter. (The iPhone 3G won't need an adapter; see page 20 for more details.)

If you want to use your favorite headphones just for listening to music, a basic audio-only adapter will do. There are many available at various prices and in various sizes. We're fans of small, flexible, and inexpensive ones; FastMac's iPhone Adapter ($4; www.fastmac.com) and ifrogz's fitz ($8; ifrogz.com) fit the bill.

If you like the built-in controller button and microphone on the iPhone's stock earbuds, but want the better sound and comfort of your own headphones, you can add similar call-taking and playback-control features to any pair of headphones. Our current favorite adapter is also among the least expensive: Griffin Technology's SmartTalk (●●●●; $20; macworld.com/3653).

Beyerdynamic DT 235

Panasonic RP-HC500

Audio-Technica ATH-ANC7

Sennheiser PX100

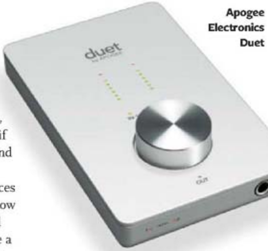
Maximo iP-HS1 iMetal Stereo Headset

Pick Your Perfect Audio Interface

How to choose the best hardware for your needs **BY JIM DALRYMPLE**

An audio interface is the go-between for your Mac and your instruments and microphones, and there are a lot of things to consider when purchasing one for your home studio. For example, will you be recording vocals, guitars, and/or bass? What software, if any, comes with the audio interface and what will it let you do?

There are many good audio interfaces on the market, so it's important to know how you plan to use it in order to find one that matches your goals. Here are a number of such products in a few price categories with a variety of features to help make your decision easier.



Apogee Electronics Duet

TonePort GX

For audio enthusiasts, Line 6's TonePort GX (about $50 online; line6.com) is one of the most affordable products on the market. The USB, bus-powered GX lets you connect a guitar or bass to your Mac and delivers high-quality 24-bit, 96kHz recording.

In addition to the 1/4-inch input for your guitar or bass, there's a 1/8-inch output for connecting to speakers or headphones. The GX can also record through a microphone, but you'll need an adapter to make it fit the 1/4-inch input jack.

The real joy of the GX, however, is in the included GearBox amp and effects modeling software. Borrowing from Line 6's Pod products, the GX includes 23 guitar and bass amp models and 29 cabinet models; 6 vocal mike preamps for studio-quality tracks; and 29 stomp-box and studio-effect models, including Delay, Flanger, Reverb, and Wah.

While the GX is limited in the number of inputs it has, it's a great starting point for guitarists new to computer recording, and GearBox lets you develop tones for many genres of music.

LINE 6
TONE PORT GX
GEAR BOX

Line 6 TonePort GX

Duet

Apogee Electronics' $495 Duet (www.apogeedigital.com) may come in a small package, but it's packed with powerful features that will appeal to everyone who is involved in computer-based recording. Capable of 24-bit, 96kHz audio conversion, the Duet connects to your Mac via FireWire.

The Duet includes a breakout cable that incorporates all of its connectors into that cable—such a design makes it very portable, but allows it to have many inputs and outputs. The cable offers two XLR microphone inputs, two 1/4-inch instrument inputs, and two 1/4-inch monitor outputs for powered speakers.

While the Duet doesn't include amp modeling software, it has been designed to integrate directly with Apple software—connect the Duet to your Mac's FireWire port, and the device activates special control panels in GarageBand, Logic Pro, and Soundtrack Pro. You can then change several options from within the control panel, including input and output choices and metering.

Guitar Rig 3 Kontrol Edition

If you're a Mac-using guitarist (or bassist) who enjoys having a physical foot pedal while still being able to control features in software, you may find that Native Instruments' Guitar Rig 3 Kontrol Edition (available for $449 online; www.native-instruments.com) is right for you.

The Rig Kontrol stompbox includes two 1/4-inch inputs for your instruments, two 1/4-inch outputs, a 1/4-inch headphone jack, two expression

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pedals, and MIDI in and out ports. It connects to your Mac via USB 2.0 and is bus powered.

Rig Kontrol is a great audio interface, but its software is also key, with 12 classic and modern amps, including models of the Marshall JCM 800 and the Vox AC30; 17 guitar and 6 bass cabinets; 4 rotary speakers; 9 microphones with adjustable positioning; and 44 effects.

The software also has a built-in loop machine and two virtual tape decks for recording your performances.

Pod X3 Live

Anyone looking to play live onstage with a stompbox and to use that same device to record on a Mac should check out Line 6's Pod X3 Live (available for $500 online; line6.com).

The Pod X3 Live builds on the legacy of the Pod XT Live, but it adds many new features. Among them is dual tone modeling, which lets you split your guitar signal into two separate effect chains simultaneously. For example, you could combine a Vox AC30 and a Marshall amp to produce a hybrid sound. All in all, you get 78 guitar amp models, 24 guitar cabinet models, 98 stompbox and studio effects, and 6 vocal preamp models.

The X3 also includes the aforementioned GearBox software, letting you configure the amp and effects settings and then save them back to the stompbox to use when playing live—unlike with the other audio interfaces here, you don't need to connect the X3 to a computer to create some rocking riffs.

The USB X3 has pretty much every in and out you could need, including a 1/4-inch instrument input; an XLR microphone input; an S/PDIF stereo digital audio output; a 1/4-inch stereo effect loop; a Variax guitar digital connector; a 1/4-inch Expression Pedal input; MIDI in, out, and thru; and an 1/8-inch stereo *Jam Along* input that lets you plug in your iPod and play along with your favorite song.

Digidesign 003 Factory

The Duet may come in a small package, but its features will appeal to everyone involved in computer-based recording.

I have been a Pod X3 Live user since the product first hit the market—while there are some things in my gear setup that I could give up if I had to, the X3 is not one of them.

Line 6 Pod X3 Live

003 Factory

With its industry-standard Pro Tools 7.4 software, Digidesign's $2,495 003 Factory (www.digidesign.com) console gives you both an audio interface and a powerful navigation tool. For example, you can use the hardware to completely control Pro Tools without touching your Mac's keyboard or mouse.

Among its features, the 003 has eight motorized faders and eight rotary knobs to control pan, send, meter, and plug-ins. This means that whenever you move a fader on the 003 console, the corresponding fader adjusts in the software. That's a huge time-saver—I never knew how much time I wasted and how uncomfortable I was trying to manipulate everything using a computer.

Of course, you would still use the computer for the more intricate editing of waveforms and plug-in settings, but for recording, mixing, and navigating your song projects, there is nothing like having a console. The 003 Factory also has a built-in screen so you can easily tell which fader controls a particular channel.

The FireWire-connecting 003 is capable of 24-bit and 96kHz resolution, and it has eight analog inputs and eight analog outputs, four professional mike preamps with individual gain and high-pass filters, ADAT and S/PDIF support, MIDI in and out, and two headphone outputs with individual source and level controls.

The 003 also includes more than 80 plug-ins, as well as virtual instruments and sound libraries that work with the Pro Tools software.

Editor at Large **Jim Dalrymple** is recording his first album on a Mac—visit our Creative Notes blog at macworld.com/3623 to follow his progress.

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Extreme Vacation Shots

Get a new perspective on your travel photos **BY DERRICK STORY**

Are your vacation snapshots stuck in a rut, with photo after photo of someone standing in front of a landmark? For pictures you can proudly show off, try shaking up your routine. For example, doing something as simple as changing your camera angle can result in more-dynamic pictures. Or take it even further with these techniques.

Local Wildlife I didn't have to go deep to capture this photo off the coast of Maui. I was snorkeling with a Canon SD700 IS secured in an underwater housing that was also made by Canon.

PHOTOGRAPHY BY DERRICK STORY

Go Underwater

One of the most exotic frontiers is just a splash away. Underwater photography offers a fresh, colorful array of subjects that are surprisingly accessible—no fancy camera required.

Get the Right Gear Many camera manufacturers sell waterproof housings for their cameras—often for less than $200. When shopping, make sure the housing you select is designed specifically for your camera model. Don't cut corners by purchasing one-size-fits-all rigs, which don't fit as well. Once your camera is secure in its protective housing, all you need is a mask, fins, and a snorkel to begin capturing the beauty beneath the sea—or in the pool.

Although you can find housing for SLRs, I prefer to use compact cameras for this type of photography. They're easy to pack and have simple housings, and, with the right settings, you can get great shots. For the best results, use a camera with a large, bright LCD screen, which will make it easier to compose your shot underwater.

When preparing the housing, make sure to follow the directions closely. The O-ring, the rubbery gasket that prevents the housing from leaking, should be perfectly clean and lubricated with the silica gel that comes with your housing. After the shoot, rinse the housing in fresh water and let it dry completely.

Pick Your Location Some of the best underwater photography happens around coral-laden reefs. The coral provides compelling compositions, and it attracts exotic fish. The best part is that you can often work just a few feet beneath the surface. This means that you have more light at your disposal.

If the area you plan to visit doesn't have any easily accessible reefs, do a little research to find a good alternative. I often check the Web sites of dive shops in the area for insider tips.

Get the Right Settings To compensate for the difference in lighting, you'll want to adjust some settings on your camera before you go under. First, check whether your camera offers an underwater scene mode. This adjusts the white balance to offset the bluish cast you often get beneath the surface. If you don't have this setting, you can get similar results by manually changing your white balance setting to cloudy.

One of the biggest challenges with underwater photography is getting sharp photos—not only are your subjects in constant motion, but you are as well. If your camera offers image stabilization, turn it on (go to macworld.com/2791 for more on image stabilization). Then set your ISO to 400 to speed up the shutter.

Another benefit to staying close to the surface where there's more available light is that you can turn off the flash and shoot in burst mode. This gives you a quick succession of photos—and a better chance of catching a shot of fast, erratically moving fish. However, once you get beneath 10 feet or so, the flash becomes necessary, and burst mode is

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no longer practical (the flash can't fire quickly enough).

Cleaning Up When you return topside, keep your camera in the housing to prevent accidentally soaking it. However, don't leave it sitting unprotected in the hot sun. The clear housing serves as a greenhouse, and temperatures inside can get precariously high quickly. Throw a white T-shirt over the camera until you can stash it somewhere in the shade.

As you review your photos, don't be disappointed if they aren't spectacular yet. Underwater shots almost always need a little postproduction work to correct colors. You can use the Enhance button in iPhoto to get your images on the right track, and then fine-tune with the Exposure and Temperature sliders in the Adjust palette.

Get a Bird's-Eye View

If snorkeling is an example of going low, then climbing aboard a helicopter or airplane and flying over a rugged landscape is definitely an exciting example of shooting from up high.

Steadying the Shot Like underwater photography, shooting from a moving aircraft at high altitudes requires some special considerations. Some cameras, such as the Panasonic DMC-TZ5 (www.panasonic.com), offer an aerial scene mode, which compensates for the bluish tint you get at high altitudes, speeds up the shutter, and activates the camera's image stabilization features. If yours doesn't offer this, warm up your tones by setting the white balance to cloudy. Also remember to turn off the flash so you don't bounce light off the window. You can further cut down on reflections by wearing dark clothing.

Getting steady shots from a helicopter can be particularly challenging. In a commercial plane, you can put the front of your lens barrel against the window to steady the shot. But that technique doesn't work in helicopters because of the rotor vibration. Instead, you should hold the camera away from the glass while you shoot—using a camera with image stabilization is almost mandatory for this situation.

Fake It If planes and helicopters aren't your thing, you can still shoot from above. Look for observation decks and access to rooftops. My favorite time to shoot from this vantage point is at dusk when city lights come on and there's still color in the sky. Be sure to pack your compact tripod so you can steady your camera during long exposures. Turn off the flash and activate the self-timer. The camera will do the rest.

Derrick Story is the author of *The Digital Photography Companion* (O'Reilly Media, 2008) and offers weekly podcasts on www.thedigitalstory.com.

Looking Down This aerial shot of Hoover Dam was captured from a helicopter with a Panasonic DMC-TZ5, using the aerial scene mode.

Nice and Dry I photographed this lionfish at the Tampa Bay Aquarium, using a Canon G9.

Staying Dry

If jumping in the ocean with a camera isn't your idea of a good time, you can still get photos of exotic fish; just check out a nearby aquarium. They often offer spectacular exhibits of undersea life.

Start by turning off the flash. Reflections are hard enough to battle when you're shooting through glass; you don't want to add bursts of light to the mix. Then increase your ISO to compensate for the low lights. For compact cameras, I usually keep the ISO around 400 to minimize image noise. But with a DSLR, I'll go all the way up to an ISO of 1600 if needed. (DSLRs do a better job of retaining image quality at high ISO settings.)

If you're shooting with a compact, check to see whether it offers an aquarium scene mode. The Canon G9 (macworld.com/3631), for example, offers this mode, which adjusts the white balance so your colors look more as you remembered them. (If your camera doesn't have this scene mode, then leave the white balance on auto.) Finally, set your camera to burst mode so you can take multiple photos in quick succession.

When it's time to take the shot, gently place the front of the lens against the glass, steady the camera, and squeeze off a few shots. If you have a rigid lens hood, attach it to protect the front element of your lens and eliminate reflections. Never press the glass element of your lens directly onto another surface. This isn't usually a problem because the front lens on most cameras is recessed, but check to be sure.

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OS X's Other GUI

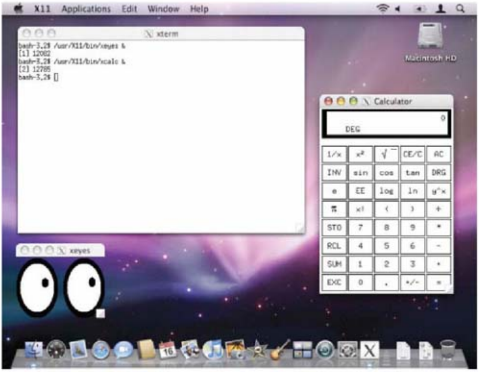
Run Unix apps from the comfort of X11's graphical interface **BY BRIAN JEPSON**

If you've ever thought about running Unix programs on your Mac, you might have assumed that meant you were stuck with the command-line interface. But you aren't.

Go to Leopard's Applications: Utilities folder and double-click on X11.app. That will open xterm. At first, you might think it's just another command-line tool like Mac OS X's Terminal. But xterm is actually a gateway to something much bigger: the X11 graphical computing environment.

From X11 (which runs side by side with Mac OS X's native Aqua environment), you can run a host of graphical Unix programs—applications that haven't been fully ported to Mac OS X—as well as applications on remote Linux or Unix systems. Here's a quick look at X11 and a few of the things you can do with it.

(Note: If you're still running Tiger, you won't find X11 installed by default; you'll have to insert your Mac OS X install discs, run the Optional Installs package, and install it from there.)



```
bash-3.2$ /usr/X11/bin/xeyes &
[1] 12082
bash-3.2$ /usr/X11/bin/xcalc &
[2] 12785
bash-3.2$ []
```

OS X's X11 Programs The X11 applications in OS X—including xeyes and xcalc, shown here—aren't exactly scintillating, but you'll find plenty of others available on the Internet.

Where to Get X11 Programs

The OS X install of X11 comes with a few programs of its own. For example, type `/usr/X11/bin/xeyes &` at the X11 command-line prompt, and you'll open xeyes, a little program that puts a pair of animated eyes on your X11 desktop; move your cursor, and the eyes will follow it. Type `/usr/X11/bin/xcalc &`, and you'll get an X11-based calculator. To get a list of the X11 programs that come with OS X, type `ls /usr/X11/bin`. You can then get more information about any of the programs listed there by typing `man` *`program name`*. That will summon the Unix manpage viewer and the text-only documentation for that program.

To be honest, the X11 applications that come with OS X aren't all that exciting. To get more interesting ones, you have to download them.

The X11 program that I most highly recommend is GIMP (GNU Image Manipulation Program; gimp.org). It's a great image editor that's actually comparable in some ways to Adobe Photoshop. If you download it from gimp.org, you'll get a huge pile of source code that you'll then have to build into an operable program. It's far easier to download the GIMP binary from Wilbur Loves Apple (darwingimp.sourceforge.net). There, you'll find GIMP 2.4.5 for both OS X 10.5 and 10.4 (Intel and PowerPC). Once you download that, you can just open the disk image and copy Gimp.app to your Applications folder.

While GIMP may be the best-known X11 program that will run on the Mac, there are hundreds of others worth checking out: Inkscape (www.inkscape.org) is a free vector-drawing program similar to Adobe Illustrator. If you want to run Microsoft Internet Explorer on your Intel Mac, you can do so with ies4osx (macworld.com/3666), an X11-based application that uses the Wine (www.winehq.com) Windows emulator to run any of four different versions of Explorer. Note that ies4osx uses a Mac-specific variant of Wine called Darwine (darwine.sourceforge.net), which is provided as a download on the ies4osx site along with ies4osx itself.

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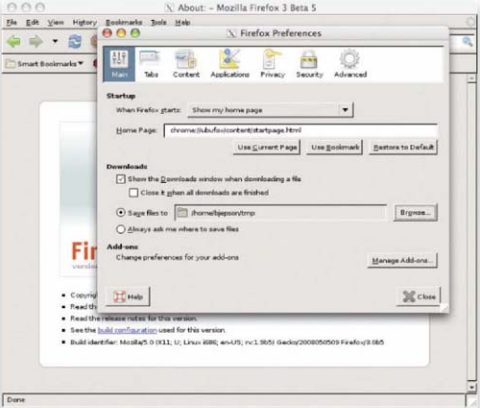
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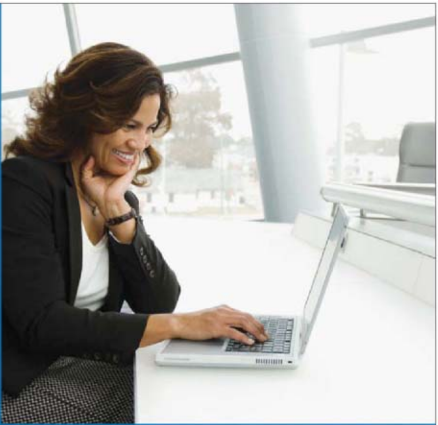
Remote Firefox Using X11, you can run applications—such as the Linux version of Firefox—over a remote connection.

Finally, if you really want to explore the world of X11 software, you can download and install either MacPorts (www.macports.org) or Fink (www.finkproject.org). Both are open-source applications that attempt to catalog and help you install dozens of different X11 programs. But be warned: If you're not familiar with the command line and Unix file management, don't bother with either of them.

Different Interfaces

Whatever applications you want to try, you'll notice immediately that they have their own look-and-feel, and it's different from OS X's.

For example, if you open GIMP, xcalc, and xeyes at the same time and then switch between them, you'll notice that the X11 menu bar at the top of the screen remains the same no matter which application has the focus. If you can get used to not zipping up to the top of the screen to find a pro-



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gram's menus, you should do just fine with X11.

Individual X11 programs often have menus and other interface elements of their own in addition to that overall X11 menu bar, and those elements aren't consistent from one program to the next. For example, to open a menu in xterm, you control-click; other programs display their menus at the top of their own windows.

Other interface conventions vary in X11. For instance, most of the time you can highlight a text selection in an X11 application, and select Edit: Copy or press ⌘-C to copy it. However, when you switch to another X11 program to paste in that selection, you'll notice that the Edit: Paste menu item in X11's global menu is grayed out; ⌘-V won't do anything. Instead, each X11 application uses its own pasting command. Most commonly, you'll press the middle mouse button to paste; if your mouse doesn't have three buttons, go to Preferences: Input, select the Emulate Three Button Mouse option, and follow the instructions.

Whatever X11 applications you try, you'll notice immediately that they have their own look-and-feel, different from OS X's.

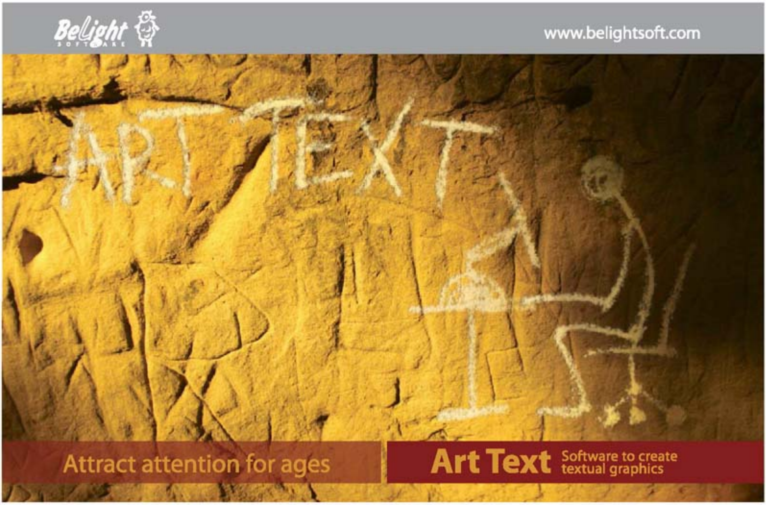
Running X11 Remotely

If you have access to a remote Unix or Linux system (either in your office or on the Internet), you can connect to it via Secure Shell (SSH) and then run remote X11 applications that will display on your Mac's desktop.

For this to work, the remote computer needs to be configured to permit SSH logins and to allow X11 to run over SSH. To do this, open xterm and type `ssh -X user_name@host_name` (replacing `user_name` with your remote user name and `host_name` with the host name or IP address of the remote computer). Log in with your password.

That done, try running an X11 application: xterm, xeyes, firefox, or anything else that's installed on the remote system. Depending on the speed of the connection, that application should open fairly quickly (see "Remote Firefox"). If you get the message "error: Can't open display: DISPLAY is not set," this usually means the administrator of the remote computer needs to enable the X11Forwarding option in the sshd_config file before you log in. ☒

Brian Jepson is the executive editor of *Make* magazine's book series and the coauthor of *Mac OS X for Unix Geeks*, fourth edition (O'Reilly, 2008).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Mac OS X Hints

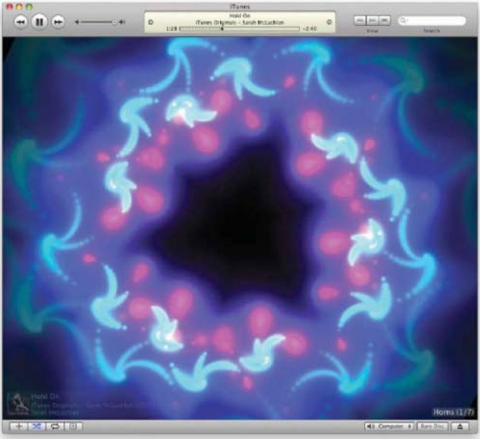
The insider tips you won't get from Apple **BY ROB GRIFFITHS**

Control the New iTunes Visualizers

Visualizers are iTunes' eye candy—they're a mix of strange, flowing, glowing, morphing, hypnotic shapes and colors that move and sway on screen as you listen to music. Mac OS X 10.5 (Leopard) adds three new iTunes visualizers—Lathe, Jelly, and Stix. To see one, choose View: Visualizer and select it by name in the menu. Press ⌘-T to activate it. Do the visualizers have any tricks? Of course!

All three will display an album-information overlay when you press I. To see the frame rate of the current visualizer, press F. That's all the special features Lathe has. Stix hides a few more—press the up arrow once, for example, to create a mirror image of the current visual effect. Press the down arrow to change the effect's speed.

It's Jelly that has the most hidden features. Press the up or down arrow to cycle among different jelly styles. If you see one you like, press M to lock it (otherwise iTunes will automatically cycle among all seven). When in lock mode, the arrow keys won't do anything; press M again to unlock Jelly, and you can then use the arrow keys again. Press and hold 1 or 2, and the center of the current jelly will move farther away or much closer to your viewpoint. Press and hold any combination of 8, 9, and 0 (zero), and you'll add an extra "glow" to certain areas of the jelly. Press and hold all three keys, and you may wish you were wearing sunglasses at your desk as the effect strobes (see "iTunes Eye Candy"). All of these number-key effects are temporary; they stop as soon as you release the keys.



iTunes Eye Candy Using some hidden commands, you can control certain features within iTunes' visualizers. Here I've given the Jelly visualizer some added visual pop by holding down a few special keys.

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Have a hint to share?

Go to MacOSXHints.com to submit it. This column was based on tips from A. J. Alfieri-Crispin, Clay Leeds, Andrew Swartz, Sharif Zawideh and anonymous contributors. Each month, the author of our favorite tip receives the *Help Desk* mug.

Easily Create New Tabs in Safari

Apple's Safari has always boasted some good tab-bar tricks—drag a tab horizontally to rearrange your tabs,

PHOTOGRAPHY BY PETER BELANGER

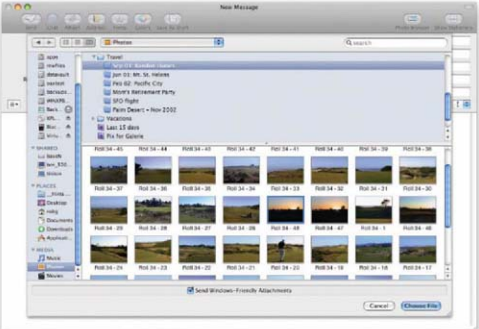
drag vertically to rip a tab off and create a new window showing that Web page, and move tabs between windows by dragging from the tab bar of one window to the tab bar of another. But Safari 3.1 (★★★★½; macworld.com/3611) includes one very useful addition: if you double-click in an empty space on the tab bar, the Web browser creates a new empty tab. True, you can do the same by pressing ⌘-T, but sometimes your hand is already on the mouse when you realize that you want a new tab. If you can't see the tab bar, select View: Show Tab Bar to make the bar visible at all times, even when you have only one site loaded.

Tricks of the Media Browser

Leopard's media browser makes it easy to look through your photos, music, and movies before opening them or inserting them in a document or e-mail message. You can access the media browser from within any media-enabled program—such as a Web browser, Apple's TextEdit, or Microsoft Word—by selecting File: Open (or access it from other similar menus, such as Mail's File: Insert File menu). In the sidebar of the Open dialog box, scroll down to the bottom, where you'll find the Media section. Click on Photos, Music, or Movies, and it will appear (see "Browse Your Media"). Find the right file and then just double-click on it to insert it into your document.

The media browser has a couple of tricks up its sleeve. For instance, you can display your media in either icon or list view by control-clicking on an empty area of the media browser—next to a picture, for example. When you do, a contextual menu will appear. Choose Display As List, and then control-click again to see a new Show Columns entry in the contextual menu. Select it and a submenu will let you specify which columns to make visible. (See a video of me explaining this further at macworld.com/3612.) This trick is great if you need more information to help you determine which particular media file you'd like to insert in your document.

You can also preview your media here, much the way you can using Leopard's Quick Look in the Finder. Select an item in the media browser and then press the spacebar. If you've chosen a music or movie file, it will start playing; photos will zoom to fill the media browser's display area. Press the spacebar again to stop the preview. With both photos and movies, you can use the left and right arrows to move from one photo or movie to the next. If you're listening to a song, the up and down arrows will move you between songs, but you'll have to press the spacebar twice to stop the previous song and start the next.



Browse Your Media When you're using a program that supports photos, music, or movies, Leopard's media browser makes it easy to browse through your media to find just the right file.

WHAT'S ONLINE

Hide Time Machine's Icon Learn a couple of tricks that will make your Time Machine drive invisible in the Finder yet still functional for backups (macworld.com/3608).

Build a Crossword Puzzle Assistant Create a simple shell script to help complete partial words in crossword puzzles (macworld.com/3609).

Change OS X 10.5's iCal Alarm Sound Leopard's iCal lets you assign a default alarm to new events. Here's how to change its sound (macworld.com/3610).

Save All Mail Attachments to iPhoto

When you receive an e-mail message with attachments, Apple's Mail—both the Leopard and OS X 10.4 (Tiger) versions—displays a Save button, with a triangle drop-down indicator immediately next to the word *Save* in the message's header. Typically, a triangle indicator like that reacts to a mouse click, expanding to show more details. But in Mail that's not the case. Instead, if you click on the triangle, Mail saves all of that message's attachments, as it would if you had clicked on Save.

However, Mail can do more with attachments, as long as you know the secret: click and hold on the Save button, and a menu appears, listing each attached file's name along with a Save As button. Select any individual file, and you'll save just that attachment to disk. The hidden gem here is the final menu item—Add To iPhoto. With one click and hold of the button, you can add all of a message's attached images to iPhoto. It's all or nothing—you can't pick and choose among images. Still, if you have relatives who are constantly sending updated kid pictures, this little menu can be a time-saver.

Page-Scroll Mail's Message List

If you use Mail and its preview pane to read your messages, you've probably noticed some odd behavior. For example, say you've clicked on a message in the list. If you press the up or down arrow, Mail selects the previous or next message in the message list. If you press page up or page down, however, the message list does not jump up or down a full page—in fact, the list doesn't move at all. Instead, page down takes you to the next page of your message.

On one hand, this makes sense—you can read lengthy messages in the preview pane and browse your list of messages with the keyboard, without having to switch the focus from one section to the other. On the other hand, it's inconsistent—why is one set of keystrokes sent to one place while another goes elsewhere? If you want to move the message list by more than a message at a time, you have to resort to dragging the scroll bar with your mouse.

Thankfully, someone at Apple thought this was a bit odd, too, and included a workaround of sorts. If you press and hold the control key and *then* press page up or page down, the message list will move up or down a page at a time. Unfortunately, moving the message list a page at a time doesn't change the selected message. To preview a different message, you still need to use the arrow keys (or the mouse) to change the selection. The easiest thing to do is press control–page down until you reach a message you're interested in, and then click on the message to preview it.

Quickly Capture Video Frames

There are lots of ways to capture single frames from QuickTime videos. You can, for instance, open the movie in QuickTime Player, find the frame you'd like to grab, and press ⌘-C to copy that frame. Switch to Preview and press ⌘-N, and you'll see your copied frame in a new document. You can also use the built-in shortcut for taking a picture of part of your screen—press ⌘-shift-4, and drag around the frame you'd like to capture. But here's a third easy way that takes advantage of Leopard's Quick Look mode.

First, select the video in the Finder and press the spacebar to play the video in Quick Look. Press the Pause button at the bottom of the Quick Look window, and then use the timeline slider to find the exact frame you want to capture. Click and hold somewhere over the image, and then drag and drop what you captured onto your desktop (or an open Finder window).

The result will be a Movie Clipping file that will open in QuickTime when you double-click on it. From there, you can use ⌘-C to copy the image and paste it in Preview, or (if you have QuickTime Pro) you can paste it into a new QuickTime document or use File: Export to save it in another format.

Senior Editor **Rob Griffiths** runs the MacOSXHints.com Web site.

POWER TIP OF THE MONTH

Create iCal Events from Anywhere

While I rely on Apple's iCal to help me track meetings and to-do items, I've always found the actual process of *adding* new events much more complex than it needs to be. Typically I'll be in some other program when I realize that I need to create an event, which means I must launch iCal, find the right date, double-click to create the event, and then press ⌘-E to bring up the Edit Event box. Thankfully, a quick Automator workflow can make all this a lot easier. (For Tiger instructions and an additional workflow for creating to-do items, see macworld.com/3613.)

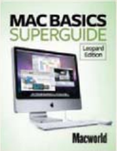
Launch Automator (/Applications). In the sheet that appears, click on Custom and then click on Choose. The Automator workspace will appear. Click once on Calendar in the Library column on the left. Then drag New iCal Events from the right-hand Actions column into the blank work area on the right. This action creates a new iCal event with the data you provide, but you can also make it display a dialog box first, so that you can enter information for the event on-the-fly. At the bottom of the action, click on Options and then select the Show This Action When This Workflow Runs option.

That's the only required change, but feel free to change the Add To and Alarm settings. Once you have the dialog box set up as you'd like it to appear, select File: Save. When the Save sheet appears, name your workflow (Create iCal Event, perhaps), and choose a save location such as *your user folder*/Documents. Select Application from the File Format pop-up menu and then click on Save.

Now quit Automator, find the file you just created, and double-click on it. After a brief delay, you'll see a New iCal Events dialog box on screen; fill it in and then click on Continue. Your little mini-application will then silently add this new event to iCal. If iCal isn't running, it will launch but will politely stay in the background.

ICON BY PAUL HOWALT

Brush Up on the Basics



Whether you're new to the Mac or you just want a refresher course, check out the *Mac Basics Superguide*, Leopard Edition. Created by the editors of *Macworld*, this 88-page book covers everything you need to know about getting started with OS X. To order the downloadable PDF, the CD, or the full-color printed book, go to macworld.com/superguide.

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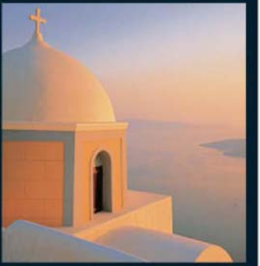

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Mac 911

Solutions to your most vexing Mac problems **BY CHRISTOPHER BREEN**

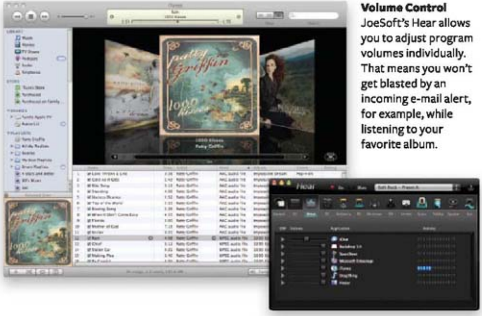
Adjust Program Volumes

Q: Is there a way to adjust iChat's alert volume separately from my Mac's main volume? For example, if I'm watching a movie, how can I get the movie to play at full volume while iChat alerts play audibly, but softly?

Luke Rein

A: By default, there's no special volume slider for iChat alerts. But you can get one with JoeSoft's $50 Hear (www.joesoft.com). Among Hear's grab bag of effects is a Mixer module that lets you adjust each running program's volume (see "Volume Control").

Alternatively, you can configure iChat to alert you via quietly spoken text, using one of Apple's Speech voices. Launch iChat, select iChat: Preferences, and then click on the Alerts tab. Use the Event drop-down menu to choose the event for which you'd like to hear a spoken alert—Message Received, for example. Then disable the Play Sound option and enable the Announce When Event Occurs option (Leopard) or Speak Text option (Tiger). Finally, adjust the Speech Volume slider to make the spoken text really quiet.



Volume Control JoeSoft's Hear allows you to adjust program volumes individually. That means you won't get blasted by an incoming e-mail alert, for example, while listening to your favorite album.

Sort Out Your Local Data

Q: My Mac Pro has two hard drives. I use Tiger on one, and I installed Leopard on the other so I could try it out. Now that Mac OS X 10.5.2 is out, I'm ready to use Leopard regularly, but when I launch third-party programs from the Tiger drive, some can't find their registration, and others are missing support files. How can I clean up this mess?

John Spahr

Have a problem?
Go to the Mac 911 forum (macworld.com/2467) for help with your misbehaving Mac or applications.

A: Most people think of Apple's Migration Assistant (in /Applications/Utilities) as a onetime tool you use when you want to move data from an old Mac to a new one, but it works in this situation as well.

Open the Startup Disk preference pane, select the Leopard drive, and click on Restart to boot from it. Launch Migration Assistant, click on Continue on the first screen, and then enter your administrator password when prompted. On the Migration Method screen, select the From A Time Machine Backup Or Other Disk option and click on Continue. The next screen will prompt you to select a place to transfer from. Choose your Tiger disk.

You'll then be prompted to select the users whose information you'd like to transfer. At the very least, you should select your user account.

When Migration Assistant asks you to select the kinds of items you'd like to transfer, leave all three options—Applications, Files And Folders, and Library—selected. (Note that if you have a newer version of a program on your Leopard drive, Migration Assistant won't replace it with an older version.) Click on Continue, and that should do it.

Fix a Broken Keychain

Q: To work around a problem, I threw away a file that held some passwords. Now, each time I log in to Microsoft Entourage, I have to reenter passwords for all four of my e-mail accounts. How can I avoid having to reenter them?

Brenda Rather

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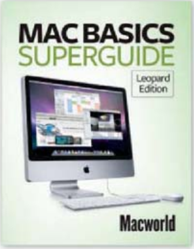
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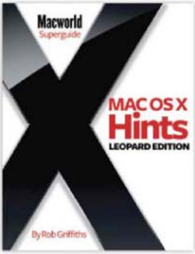
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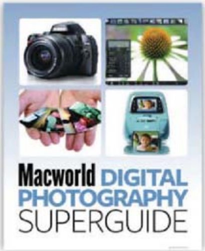
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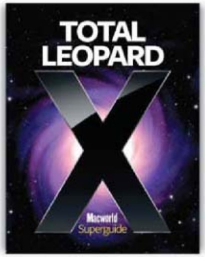
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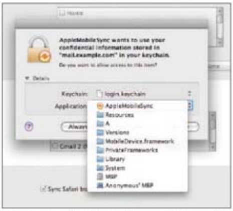
A: You should see an Add To Keychain option in the dialog box where you've been entering these passwords. However, if you have selected this option and found that it does no good, the first thing to do is repair your *keychain*—the file that holds your passwords for e-mail accounts and more.

Launch Keychain Access (in /Applications/Utilities) and select Keychain Access: Keychain First Aid. Enter your user name and administrator password in the window that appears, select the Verify option, and then click on Start. A list of entries will appear. If any are red, that indicates that those keychain items have a problem. Select the Repair option and click on Start again.

If you continue to have problems, you can manually add the passwords to your keychain. Choose File: New Password Item. In the sheet that appears, you'll see three blank fields. In the Keychain Item Name field, type the IMAP, POP, or SMTP address for your first account. So, for example, for your receiving (POP) e-mail account, you'd enter something like: `pop://pop.example.com`. In the Account Name field, type the account name you use with your e-mail client—`brather@example.com`, for instance. Finally, in the Password field, enter the password for this account. Click on Add. Repeat this process for your other accounts.

If this technique fails, you might need to start fresh. But be aware that you'll have to enter *all* your passwords again—not just those for your e-mail account. In Keychain Access, select Preferences and click on Reset My Keychain. This creates a new, empty keychain to which you'll add passwords as you're prompted to create them.



AppleMobileSync wants to use your confidential information stored in "mail.example.com" in your keychain.

Do you want to allow access to this item?

Get the Details Plagued by strange alerts like this? Click on the triangle next to the word *Details* to see the item that's asking permission to do something.

Bugs & Fixes BY TED LANDAU

Can't Stop Spotlight Is one of your hard drives clicking incessantly, gradually slowing down your work? Spotlight may be indexing the drive, but never finishing the job. If the drive doesn't contain anything you search—say it's your backup drive—go to your Spotlight preference pane, click on the Privacy tab, and add the drive to the "exclude" list. Otherwise, try turning Spotlight off and on again. The simplest way to do this is with Fixamac Software's $13 Spotless utility (●●●●; macworld.com/2524).

Disappearing Apple TV Perhaps the most common problem people have with the Apple TV is that the device fails to show up in Apple's iTunes. The Apple TV update 2.0.2 seems to have fixed this problem, but if you're still having trouble, Apple offers a slew of possible fixes at macworld.com/3590.

Bookmark Syncing Snafu After updating to Apple's Safari 3.1 (on a Mac running OS X 10.5.2), you may be unable to sync your bookmarks to a .Mac account, an iPhone, or an iPod touch. If so, quit Safari, launch Terminal (/Applications/Utilities), type the following (or copy and paste it from macworld.com/3592), and press return:

```
defaults delete com.apple.safari RegisteredSafariSyncClient
```

Almost Invisible Drives Can't see a mounted hard drive on the desktop, in the Finder, or in the Finder's sidebars, but you can still navigate to the drive's contents via the Finder's Go: Go To Folder menu? If the problem is with the startup volume, type the following two commands in Terminal (copy and paste from macworld.com/3592). Press return after each one:

```
xattr -d com.apple.metadata:kMDItemFinderComment /
sudo chflags nohidden /
```

(Please note that `metadata` is one word.) For any other volume, substitute `/Volumes/`*`hard drive name`* for each slash (/). Log out and log back in.

Senior Contributor **Ted Landau** is the founder of MacFixIt (www.macfixit.com). Share your problems at bugs@macworld.com or on Macworld.com's Mac 911 forum.

Don't Fear the PubSub Agent

Q: Recently I've been scared by this recurring request: "PubSub Agent wants to use your confidential information stored in idisk.mac.com (*my login name*) in your keychain. Do you want to allow access to this item?" I deny access every time. Is this an attack?

Via the Internet

A: When you see an alert like this, odds are it's legit. Still, you don't want to get into the habit of clicking on Allow Once or Always Allow without doing some investigation. You'll notice a Details entry in the alert dialog box with a triangle next to it. Click on the triangle to see exactly what's requesting permission. If the item is within the System Folder, your Mac is telling you that one of its core components needs your permission to act upon the proposed task. In other words, you can safely select Allow Once or Always Allow (see "Get the Details").

The alert you've been seeing appears when you sync bookmarks with Apple's .Mac service (www.mac.com). The next time you see it, click on Always Allow and it won't bother you again.

Senior Editor **Christopher Breen** is the author of *The iPod and iTunes Pocket Guide*, third edition (Peachpit Press, 2007), and *The iPhone Pocket Guide*, second edition (Peachpit Press, 2008).

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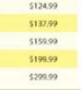

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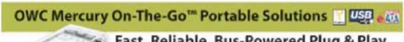

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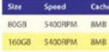

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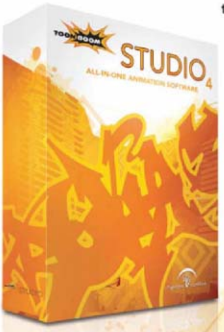

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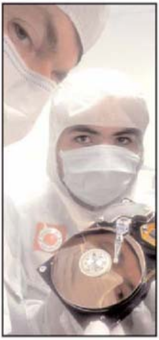

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The Elephant in the Living Room

How Apple should turn the Apple TV into a TiVo-killer

As long as there have been TV set-top boxes, users have clamored for Apple to create one.

Almost 15 years ago, Apple did design an Apple Interactive Television Box, but it never emerged from the prototype stage. Ten years ago, a project code-named Columbus was rumored to be a set-top box but turned out to be the iMac; it was hard to be disappointed.

Finally, in 2006 Apple shipped its first set-top box, the Apple TV (🖱🖱🖱🖱; macworld.com/3654). After such a long buildup, it was bound to be a disappointment. For $299, it essentially turned your TV into a giant iPod. You had to buy, download, and store everything on your Mac, and then download or stream that content from your Mac to your Apple TV.

It's hard to believe that Apple really expected such a product to catch on. Perhaps the company never really did: Last year, Steve Jobs called the Apple TV "a hobby"—an uncharacteristically low-key stance for a CEO so focused on hit products.

Then, at Macworld Expo 2008, Apple announced the Apple TV "Take 2." With it, customers could now purchase or rent movies from the comfort of their couch, downloading everything directly to their Apple TV.

But the Apple TV still hasn't become an iPod-like megahit. It's surprising: How could a company as astute as Apple fail twice at creating the set-top box its customers want?

The TiVo Factor

I don't think there's really any mystery here. When it comes to set-top boxes, there's one word on the lips of everyone in Apple's target market. But you won't hear Apple mention it.

That word is *TiVo* (www.tivo.com), the preeminent maker of digital video recorders (DVRs). TiVo has single-handedly defined the DVR experience for millions of consumers. It's now impossible to expect a set-top box without DVR functionality—such as the first two generations of the Apple TV—to succeed in the marketplace.

Given the success of its product, you'd think TiVo would be riding high. But in fact, the company has been battered since its inception. Not by customers, mind you, but by the entertainment industry itself, which believes it has a vested interest in preventing its customers from using the features that a DVR can provide.

The classic example is the ability to automatically skip commercials. That feature is technically feasible and universally desired, yet it remains unavailable in TiVo's products. You can fast-forward through ads on a TiVo. But the ability to leap ahead 30 seconds at a time (as you could on other DVRs) is hidden by default, and there are no automated ad-detection or ad-skipping features.

Where TiVo bowed to industry pressure and compromised its products, Apple could fight and win.

ReplayTV, a competing DVR maker, dared to include ad skipping as one of its features and was sued by a group of TV and movie studios in 2001. Largely because of legal expenses, the company went bankrupt two years later. Meanwhile, the TiVo bowed to industry pressure and went on to dominate the DVR market.

This stifling atmosphere continues to hamstring TiVo's products. The TiVo user interface has become saturated with logos and other paid advertisements, while features that consumers really want aren't implemented. And truth be told, TiVo's hardware and software have never had the polish or pizzazz of Apple's. That's why there remains a fervent desire—at least among Apple's customers—for the Apple TV to become an Apple TiVo.

Apple could succeed where TiVo has failed. In addition to its technology and design prowess, Apple has shown that it's willing and able to take on the powers that be. With the iPod and iTunes, the company dragged the giants of the entertainment industry kicking and screaming into the modern age. With the iPhone, it reversed the balance of power between mobile phone carriers and handset makers. Where TiVo bowed to industry pressure and compromised its products, Apple could fight and win.

If Apple wants its "hobby" product line to take off like the iPod, it has to acknowledge the hole in the Apple TV's functionality and create a real DVR. A decade ago, it would have seemed suicidal for any technology company, let alone Apple, to take on the cable, TV, and movie industries. Today, the success of the Apple TV, and perhaps the future of the DVR itself, depends on it. ☒

John Siracusa is a columnist for Ars Technica (arstechnica.com).

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MacBook® Pro 15" (Mid/Late 2007) 2.2 GHz Core™ 2 Duo (4MB L2 Cache)	122.37 seconds	Only 85.15 seconds!	30% faster
MacBook Pro 15" (Early 2008) 2.6 GHz Core 2 Duo (6MB L2 Cache)	102.50 seconds	Only 72.94 seconds!	29% faster

This benchmark measures the time (in seconds) it takes to execute a custom 21-step action script using Adobe® Photoshop CS3. *Lower times are better.*

"RAM Hog" Results

RAM Configuration	*Stock* 2.0GB 2048MB (2x 1024)	*OWC Powered* 4.0GB 4096MB (2x 2048)	
MacBook Pro 15" (Mid/Late 2007) 2.2 GHz Core 2 Duo (4MB L2 Cache)	297.68 seconds	Only 84.97 seconds!	71% faster
MacBook Pro 15" (Early 2008) 2.6 GHz Core 2 Duo (6MB L2 Cache)	250.28 seconds	Only 76.50 seconds!	69% faster

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